NEW EQUIPMENT DIGEST

EQUIPMENT • IMPROVEMENTS • PROCESSES • MATERIALS • METHODS • APPLICATIONS • LITERATURE

Vol. 7 December, 1942 No. 12

PUBLIC LIBRARY DETROIT

ANNOUNCING . . . .

REVISTA INDUSTRIAL, Latin American editions of New Equipment Digest, will be published monthly starting early in 1943 by Equipment Digest Publishing Co., a subsidiary of The Penton Publishing Co. A Portuguese edition will be published for Brazil and a Spanish edition for the other Latin American countries.

One of the basic purposes of Revista Industrial will be to describe industrial developments, equipment, processes, materials, methods and applications developed by manufacturers in the United States, and give brief reviews of industrial literature which is available to Latin American firms.

In addition to keeping Latin American firms informed about products and services offered by United States manufacturers, this publication should contribute to the cementing of Latin-American trade relations and to the furthering of the industrialization and economic development of the Latin Americas.

The circulation will be addressed to firms engaged in mining, construction, public utilities, engineering consultation, transportation, textiles, processing and manufacturing.

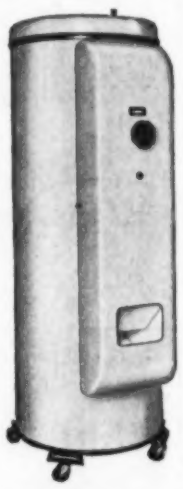
Editorial content and page style will follow that of New Equipment Digest.

Henry R. Webel will be Managing Editor of Revista Industrial. In addition to being an accomplished linguist, Mr. Webel has been engaged for many years in industrial export advertising and international trade. He has traveled extensively throughout the world, but more particularly in the Latin Americas. With this experience, Mr. Webel has a wealth of knowledge on economic conditions and markets in the Latin Americas.

Editorial direction, translation, composition, printing and distribution, as well as building and maintenance lists will be handled in the New York City office at 110 E. Forty-second St. Translators will translate copy into their native languages, assuring practical translations. Business offices will be maintained in the Penton Building, Cleveland, O.

RIVET DISPENSER

Handling of bulk iced rivets in aircraft plants is facilitated with this selective automatic rivet dispenser. Special rivet can with reinforced metal top and bottom, and waxed surface makes it possible to process rivets from quench, through storage to final assembly line, with rivets sealed in protective container. Usual freezing of rivets because of condensation is eliminated.



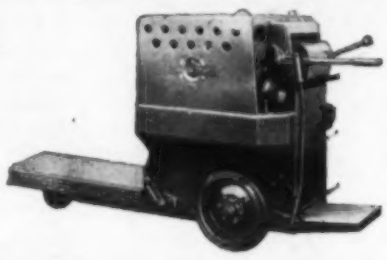
Dispensing of rivet cans is relatively simple operation. Operator dials for size desired, presses button and receives can of rivets cooled to minus 30 degrees Fahr. He can use all or part of rivets and then replace cover. At no time will rivets be prematurely aged or mixed with other sizes.

Model RZ-28 has dispensing capacity of 120 cans, each measuring 2⅛ inches in diameter by 1⅞ inches high and holding ¼ pound of rivets. Dispensing rate is 15 cans per minute, with selection from eight columns in magazine. Unit is insulated with 4 inches of Fiberglas. Refrigeration is supplied from 1/3-horsepower, twin Freon-12 compressor and condensing unit which holds low temperature. Made by **Revco, Inc.**, Dept. 500Y, 1412 E. Church St., Adrian, Mich.

▲ Mention Item NED-6208 when writing ▲

ELECTRIC INDUSTRIAL TRUCK

Adaptable for lifting, carrying and towing operations, this Lo-Lif-Toer electric industrial truck is claimed to increase number of loads that can be handled per man, per hour. Since workman always rides, there is no need for operator to dismount for any operation. Pushing and pulling, common to hand lift trucks, are eliminated and materials handling operations are speeded up.



Loads weighing up to 2500 pounds can be handled. In plants where heavier loads than this are frequently encountered, this truck may be used to advantage for light and medium duty materials handling. Truck is furnished complete with battery and charger. It will operate under 7-inch skids. Made by **Crescent Truck Co.**, 1134 Willow St., Lebanon, Pa.

▲ Mention Item NED-6209 when writing ▲

CELLULOSE SOLUTIONS

Waterproof, oilproof, heatproof and non-conductive adhesive cements for permanent or temporary bonding of such materials as wood, leather, fiber, cloth, glass, plastics and metals are included in this complete line of cellulose solutions. These materials are engineered for particular applications.

Air drying solutions are used for bonding and permanently sealing small apertures or cracks. Thinners and activators can be adapted to special needs. Softening liquids are designed to soften, condition and preserve leather of all types. Waterproofing and preservative solutions are available for leather, fiber and cardboard.

Stiffening solutions are in use for stiffening leather, fiberboard, fabrics and cardboard. Made by **Cataract Chemical Co.**, 93 Rapin Place, Buffalo, N. Y.

▲ Mention Item NED-6210 when writing ▲

MULTIPLE COPY PENCIL

Soft enough to be legible on top sheet of manifold copies without cutting through original, this No. 700 Duro lead manifold carbon copy pencil is easy to erase and is strong enough to withstand pressure required for this work. It is specifically designed to make clear and legible multiple carbon copies. Legible impressions are made through from five to six carbons. Writing will not smudge from moist hands.

Pencil is available in medium, firm and hard degrees. Samples will be sent to firms requesting them on their business letterhead. Made by **Reliance Pencil Corp.**, Mount Vernon, N. Y.

▲ Mention Item NED-6211 when writing ▲

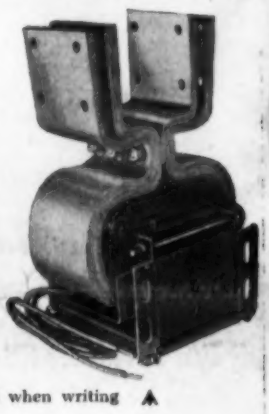
Read Carefully

CHECK AND PASS ON

CHECK	NAME AND TITLE	SEE ITEM NO.

WELDING TRANSFORMER

Designed for war production operations, this line of special welding transformers includes production equipment which is intended for specific functions. Unit shown operates on primary circuit of 115-volt, single phase, 60-cycle current and has secondary characteristics of 0.75-volt, 1600 amperes output. Similar units are available with characteristics for other special welding applications.



Full details of this line concerning design, applications and operational features are available only to plants engaged in war production. Made by **The Acme Electric & Mfg. Co.**, 30 Water St., Cuba, N. Y.

▲ Mention Item NED-6212 when writing ▲

OIL SOLVENT

Developed for naval salvage and repair, Gunk P-96 solvent will dissolve and emulsify heavy accretions of bunker "C" fuel oil in presence of salt water. This concentrated self-emulsifying degreasing solvent renders degreased surfaces particularly compatible for application of red lead undercoat.

It is claimed that because of powerful penetrating and emulsifying action of colloidal solvent, all traces of oil are made water soluble. Thus large areas, such as hold of war ships can be rinsed and decontaminated by sluicing with water hose. Made by **Curran Corp.**, 6 Pleasant St., Malden, Mass.

▲ Mention Item NED-6213 when writing ▲

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How Small Plants Obtain War Work

COMPLETION of the operating organization of the Smaller War Plants Division of the War Production Board has been accomplished, and with exception of two appointments in the field, it is now fully staffed to carry out its work.

In explaining the organizational chart of the division, Lou E. Holland, head of the division and deputy chairman of the War Production Board on Smaller war plants, pointed out the distinction between the division and the Smaller War Plants Corp. of which he is chairman of the board. This latter corporation is a financial institution created to help smaller plants with their money problems, either in their efforts to get war orders or to handle them after they have secured them. The main function of the division is to get business for the smaller plants and help them with engineering assistance to produce the goods.

Working directly with Mr. Holland on matters of policy is the Advisory committee, the board of Consultants, and representatives of organized labor. Abbott Smith, one of the directors of the Smaller War Plants Corp., has been designated as special assistant.

Frank Smith is deputy director of the division and will have direct control of the six operating branches. These include: Agencies Contact under O. S. McPherson, Facilities under B. T. Bonnott, and Plant Service under Leo Rush. The Agency Contact branch brings in work from procurement officers of the services; the Facilities and Plant Service branches are responsible for the selection of the jobs to be placed, and after these job selections are made, they make the final determination of the plants which will be recommended to procurement officers.

In the Facilities branch are three sections: First, the Facilities Records section which has general knowledge of plant capacity throughout the country; second, the Critical Tools section which keeps the record of open capacity of critical tools up-to-date; and third, a Tool and Die Service section.

Plant Service is the branch where engineering service originates. Thousands of letters are received, asking for help in getting war work. These letters usually describe the kind of plant, the kind of work it has been doing and the plight it is in at present. The engineers in this branch advise these inquirers as to their proper course of action.

When a plant is selected to do a specific job, the engineers in the Plant Service branch give whatever assistance is needed in connection with bidding on the job, the adaptation of machinery for the work, and help determine the best methods of production. In many plants none of this service is needed because the plant is fully able to do the work unaided; but in other instances, experienced guidance is useful.

Charles H. McArthur heads the Field Control branch. All of the Deputy Regional directors on Smaller War Plants in the twelve War Production Board field offices and their representatives in 123 district offices report to Mr. McArthur. Recommendations of representatives in the field are relied upon heavily

(Continued on Page 2)

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Trowel a smooth, tough, plastic surfacing right over your old concrete or wood floor.

Plastic Rock comes complete, packed in barrels. Nothing more to buy. No application "formula" to confuse you. Simply mix and trowel right over old floor. Average depth one-half inch. Old floor Saturday is a new floor Monday. Also patches concrete to a perfect feather edge. Plastic Rock is absolutely spark-proof, skid-safe wet or dry, dustless, silent. Feels like cork under foot. Cannot splinter, crack, crumble, curl or loosen. Heavy loads in steel wheels actually improve it. Five-year old floors show no wear. Natural color is dark gray. Also furnished in red, green and brown. Used by U. S. Army, Navy and largest industries in America. Your contractor or your own crew can apply.

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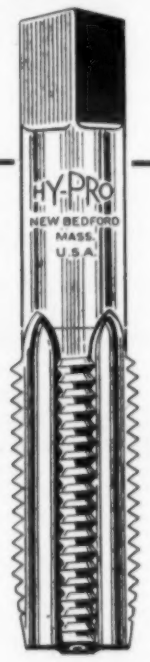
HY-PRO



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Get Rid Of Your Starter Trouble!

With NEW INSTA-LITE gives you Instant Starting and Instant Lighting with NO starting switch

In this new fluorescent unit for industrial lighting you get instant starting and lighting. INSTA-LITE combines ballast and starter in one unit. There is no separate starter. Thus all starter trouble and maintenance is eliminated. Power factor 90% or over, low power losses, no flicker, minimized stroboscopic.

INSTA-LITE starts at lower temperatures and lower voltages. It eliminates blinking and ineffective starts and thus protects tubes. It is the complete answer to starter trouble and expense.

Now available with DUR-O-LITE non-metallic reflector.

Write for descriptive circular, today.

THE SPERO ELECTRIC CORP
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Smaller War Plants

(*Continued from Page* 1)

in the selection of facilities to handle jobs. Field checks of plants are usually made prior to recommendation of any plant to the procurement agency.

The Coordination branch under Robert Graham is responsible for the first screening of the requirements brought in by the Agencies Contact branch. A committee of engineers from the Facilities and Plant Service branches and one or more men from the Agencies Contact branch choose the jobs to be handled. The Coordination branch follows through and sees that action is taken promptly to lead up to specific recommendations to the procurement services concerned.

Many manufacturers still come to Washington to consult with the division, even though they are urged not to do so. Carl Bolte of the Interview branch takes care of their needs.

The procedure by which the Smaller War Plants division will seek to give effect to directives issued by the Army Services of Supply, the Navy and Maritime Commission and to spread war work to smaller plants was outlined recently by Deputy Director Frank Smith.

The first step is for the division to find out what the future requirements are as soon as they are determined by the planners of production as determined by grand strategy. These requirements are seen in specifications and blueprints in the various procurement offices.

Division men, working with officers assigned to select items suitable for smaller plants, carefully check over the specifications and decide which jobs will be undertaken.

These requirement items are then examined by a committee under Robert Graham which is composed of engineers from the Plant Service and Facilities branches and one or more contact men. This committee meets every day and decides finally which items will be worked on and where the best local facilities are most likely to be found. This group is familiar with the situation in smaller plants everywhere and it has full information as to plants which are desperately in need of work. Other things being equal, the committee tries to place the work where the distress is greatest.

After this preliminary examination, the Plant Service branch breaks down the jobs and designates specific plants to handle them. This necessitates direct contact through the field engineers with the plants selected. From what is known of a given plant's equipment and ability, it is concluded that the plant can handle the job. One of the field men discusses the job with the managers and production men in the plant. If this close examination shows that the selected plants are satisfactory, a specific recommendation is made to the procurement officer who will place the order.

When this stage is reached, the owner or manager of the plant may be asked to come to Washington if the contract is to be placed there. In many instances, contracts are let in the field and the entire transaction is handled by the field representatives and the procurement officers.

When the order is placed in accordance with the recommendations of the division, field engineers follow up closely with engineering advice and assistance.

A semi-monthly report will be issued henceforth by the division giving the amount in dollar value of contracts placed, the number of contracts and the number of plants participating in each contract.

Thirty-nine prime contracts, totaling $16,000,000 had been awarded up to November 13. In four of these contracts, three being of the "mother hen" type and one a pool, thirty small firms are participating. To date, 171 requirement items have been dealt with and facilities have been recommended on 121 of these to the procurement officers concerned. The time lag between prime contracts awarded and specific facilities recommended accounts for the discrepancy between the 39 prime contracts awarded and the 121 requirements processed.

Plant owners and managers seeking war work are urged not to go to Washington unless called there for conference. Time and money will be saved, and vital transportation facilities will not be tied up. Complete service can be obtained from the Smaller War Plants division man in the nearest War Production Board field office.

The following is a list of the twelve Deputy Regional directors for Smaller War Plants division in War Production Board Regional offices.

REGION	DEPUTY REGIONAL DIRECTOR
1. Boston, Mass., 17 Court St	Clarence A. Woodruff
2. New York City, N. Y., 122 E. Forty second St.	Sydney Hogerton
3. Philadelphia, Pa., 1617 Pennsylvania Blvd.	Audenreid Whittemore
4. Atlanta, Ga., 116 Chandler Bldg	to be designated
5. Cleveland, O., 13 Union Commerce Bldg.	Daniel P. Ford
6. Chicago, Ill., 20 N. Wacker Drive	Linwood A. Miller
7. Kansas City, Mo., Mutual Interstate Bldg.	Roy W. Webb
8. Dallas, Texas, Fourth Floor, Fidelity Bldg.	William G. Morrison
9. Denver, Colo., Kittredge Bldg	Robert W. Gordon
10. San Francisco, Calif., Market St	Oscar L. Starr
11. Detroit, Mich., 7310 Woodward Ave.	Hugo A. Weissbrodt
12. Minneapolis, Minn., 326 Midland Bank Bldg.	to be designated

ARMOR-PLATE saves LIFE AND LIMB

Another "ULI" sensation! Insurance against falls and injury—*wherever feet may slip.* Just spray or brush Armor-Plate on dangerous surfaces, and save limbs and lives. Abrasive texture like No. 3/0 emery cloth. For metal floor plates, stair treads, ramps, corridors, airplane wing "steps," ship decks, gangplanks, truck running boards, stepladders—wherever wet, oily or slippery surfaces hamper production and threaten life. Rust-inhibiting. Sticks to wood, metal, concrete, slate, and glass. Cost applied less than 1c per sq. ft. Jobs three years old show no wear. Choice of gray, red, brown or green.

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Aerostand*

Adjustable, Mobile Workstand Safely Speeds Airplane and Plant Servicing

Quickly adjustable to any height from 3′ to 10′ by hand-operated hydraulic strut, AEROSTAND enables mechanic to reach every part of airplane fuselage, wing or motor, and the hard-to-get-to places on plant equipment, etc. The 4′ x 4′ working platform is equipped with 2′ extension. AEROSTAND does the work of several single-purpose stands, and used in pairs with special planking (available in convenient lengths) fitted into lugs provided for that purpose, they form a solid working scaffold. Mechanical safety pin holds platform securely. Overall dimensions of frame, 4′ x 11′. Made of light tubular steel to assure complete safety at all elevations. Working load, 1500 pounds. Adjustable feet take load off wheels when in use and compensate for uneven ground or floor. Ask for details.

Riding on 16" air wheels (or casters for plant or hangar use) AEROSTAND can be easily towed *anywhere.*

*Trade Mark Registered, Patent applied for

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DESIGNERS AND PRODUCERS OF SPECIAL EQUIPMENT
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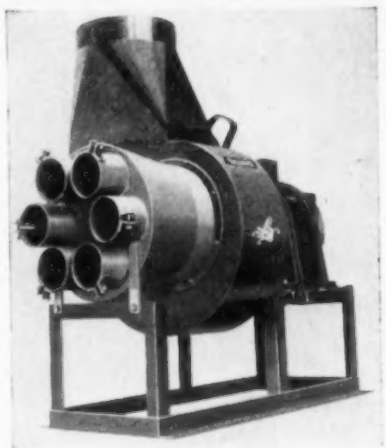
SHIPHOLD .... MINE ... SEWER TUNNEL .... WELDING DEPARTMENT

Exhausters & Ventilators



"OCTOPUS", powerful portable exhausters, draw gases and smoke from shipholds and other closed-in working areas.

The housing, welded into one integral unit, is bolted to a heavy steel frame with hooks for carrying or hanging. It may be placed or hung in any convenient place between the working area and open air, and connected with flexible hoses to the area to be ventilated.

Powered by a heavy duty ball bearing motor, the "OCTOPUS" can be operated in any position. Newly developed perfectly balanced blower wheels especially designed for this application are individually tested to 80% overload.

The "OCTOPUS" exhauster can easily be converted into a fresh air ventilator by simply changing the position of the tube adapter which is part of the equipment; one to six nozzles can be used as desired. Caps are provided for nozzles that are not in use.

SPECIAL OFFER

to plants engaged in war production — An "OCTOPUS" exhauster and ventilator will be shipped on approval for thorough testing in your own plant. Ask us about this special offer.

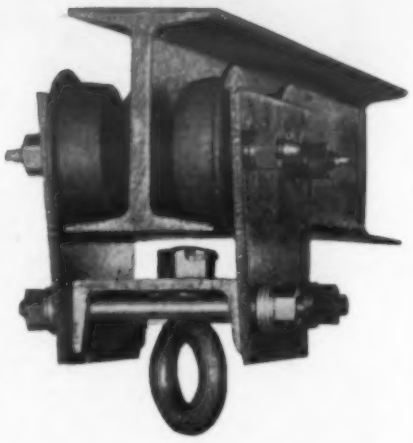
The "OCTOPUS" may be the answer to your perplexing ventilation and exhaust problems. . . Send today for complete literature

CHELSEA FAN & BLOWER COMPANY, INC.
IRVINGTON, N. J.

▲ Mention Item NED-6219 when writing ▲

GRAY TROLLEYS

For Any Size I-Beam



GRAY TROLLEYS are designed to meet the demand of industry for a trolley with closest possible headroom. They safely and efficiently raise loads, are easily transferable through the shop, and are equipped with New Type, ThoroughlySealed, Gray Ball Bearing Trolley Wheels.

Long, trouble-free service is what you get with every GRAY TROLLEY and that's an important consideration today. Made in 250-lb. to 2-ton standard capacity sizes adjustable to suit various I-Beams. We would like you to have our bulletin which describes and illustrates in detail our TROLLEYS and our TROLLEY WHEELS. Send for it now!

GRAY HUB COMPANY
Incorporated 1922
17265-17403 GABLE AVENUE DETROIT, MICHIGAN

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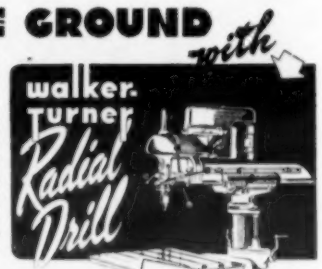
COVER MORE GROUND with

You can cover an astonishing lot of ground in area, work handled and output—with a WALKER-TURNER RADIAL DRILL. Handles all light drilling, tapping and routing at any point within a 62" circle. Spindle speeds from 160 to 8200 r.p.m. Distinct advantages are: 1—Prompt shipment to war industries. 2—Compactness permits installation at any point in production line. 3—Women operators find them easy to operate and unskilled labor can learn to handle them with very little breaking-in. 4—Standardization and quantity production permit an exceptionally reasonable price.



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METAL-CUTTING BAND SAWS • POLISHING LATHES • FLEXIBLE SHAFT MACHINES
RADIAL CUT-OFF MACHINES FOR METAL • MOTORS • BELT & DISC SURFACERS

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Justrite

BRICK AGER

The newly laid brick are so successfully camouflaged that even the most prying eyes would never suspect that an alteration had been made. Ideal for covering new mortar after tuck-pointing.

Helps in a blackout, too, because new brick is clearly seen in the moonlight.

Justrite Brick Ager is as easy to apply as it as startling in effect.

May be applied by spray or white-wash brush. May also be mixed with mortar when brick is laid and the new brick dipped in the solution.

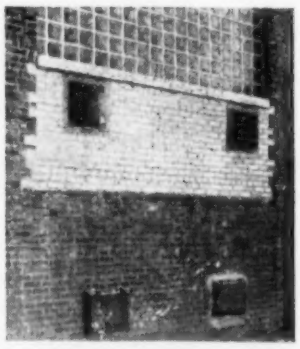
ONE PINT COVERS 500 SQUARE FEET OR MORE DEPENDING ON AGE OF BUILDING.

PRICE
$1.80 per pt. - $3.50 per qt.
$10.00 per gal.

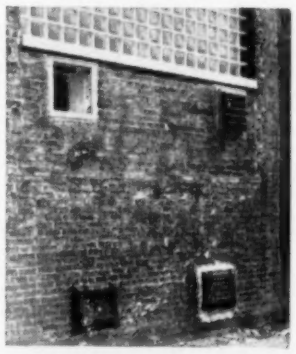
Dept. Q

LOUIS MELIND CO.
362 W. Chicago Avenue
Chicago, Ill.

Before



After



● These photographs made in a few minutes of each other demonstrate how new bricks "melt" into surrounding wall when covered with Justrite Brick Ager.

▲ Mention Item NED-6222 when writing ▲

UNIVERSAL TRANSIT LEVEL

Several features have been added to this universal level transit which make it adaptable for use by engineers and contractors. Instrument is equipped with high power telescope, same as that used in more expensive engineers' transits. Clamp and tangent screws are provided on both horizontal and vertical circles. Compass can be furnished as accessory equipment, if desired.

Spindle is supported in ball bearings and end thrust is adjusted through use of threaded cone bearing. This feature is claimed to assure accurate adjustments under all operating conditions. Instrument operates freely, as spindle will not drag or tighten even in sub-zero temperatures. Made by **David White Co.**, 312 W. Court St., Milwaukee, Wis.

▲ Mention Item NED-6223 when writing ▲

CABLE BONDING RING

Designed for use wherever there is need for bonding between electrical plug shell and wire shielding, this bonding ring can be employed with either flexible coupling nut or cable clamp. Ring is now being used extensively in bonding shielded radio and instrument circuits, but is adaptable to many other applications where tight bond is required.

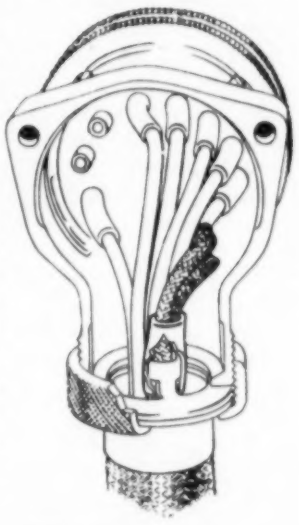
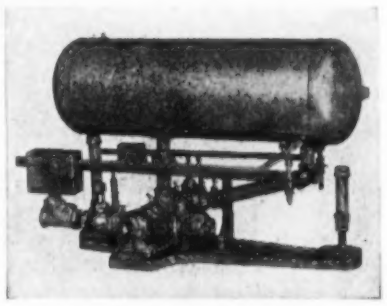


Illustration shows unit installed in 90-degree type K connector. Pigtails of shielded wire are soldered to bonding ring and insulation placed over soldered joint. Insulation, in illustration, is cut away to show position of tongue at joint. Sizes are available to fit wide variety of conduit nuts. Made by **Cannon Electric Development Co.**, Dept. 49, 3209 Humboldt St., Los Angeles, Calif.

▲ Mention Item NED-6224 when writing ▲

TILT TYPE TRAP

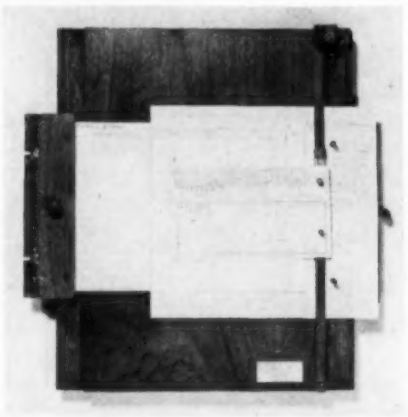


Supplementing line of deaerating systems for steam drainage and boiler feeding purposes, this three-valve tilt trap will operate on various pressures on lifting services. Construction features are similar to those of standard return and non-return tilt traps.

Male steam and water ends are relieved of any weight of water carried on packing through use of sturdy construction of female trunnion supported on center bearings. Made by **W. M. Acker Organization, Inc.**, 3167 Fulton St., Cleveland, O.

▲ Mention Item NED-6225 when writing ▲

PAYROLL RECORDER



So designed as to register three payroll records, this redesigned Victory payroll recorder is claimed to facilitate preparation of payrolls. Three forms which are held are earnings statement to employee, which may be vouchered check; payroll journal and payroll ledger. All three forms move perpendicularly and payroll journal carriage is ratcheted so that it moves only one space at a time.

Formerly made of Bakelite and chromium plated steel and brass parts, this device is now constructed almost entirely of non-critical solid and veneered black walnut. Metal parts, consisting of screws, grommets and clips, weigh less than three ounces. All time saving features of original model have been retained. Made by **The Shelby Salesbook Co.**, Dept. W.O.C., Shelby, O.

▲ Mention Item NED-6226 when writing ▲

MARKING TOOLS

SAVE CRITICAL MATERIALS

Instead of using scarce metals for tags, nameplates, etc., mark materials, parts, and products with IDEAL Marking Tools.

IDEAL
ELECTRIC ETCHERS

Permanently mark iron, steel and their alloys; everything from small tools and parts to large castings. Five sizes.

IDEAL
ELECTRIC MARKER

Permanently marks **all** materials; glass, metals, ceramics, etc.

Prevent delays—Avoid confusion from use of wrong types and sizes. Eliminate danger of theft or loss of vital tools, dies and parts.

MOST COMPLETE LINE ON THE MARKET

Write for FREE Detailed Literature

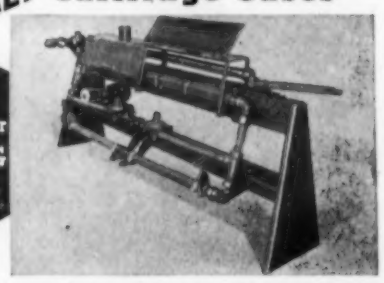
IDEAL COMMUTATOR DRESSER COMPANY
1032 PARK AVENUE SYCAMORE, ILLINOIS
Sales Offices in All Principal Cities
In Canada: Irving Smith, Ltd., Montreal, Quebec

▲ Mention Item NED-6227 when writing ▲

MORRISON ENGINEERED

For Annealing STEEL Cartridge Cases

Flame-Type Mouth and Taper ANNEALING MACHINES



One of a line of machines designed for mouth annealing and taper annealing on steel cartridge cases at speeds, depending on size, ranging from 400 to 4800 pieces per hour. They are made standard in sizes to handle all heavy production cases from Cal .50 to 3-inch and larger, are gas-fired and of the continuous conveyor type. It also is adaptable to a wide range of other industrial uses:

1. Drawing temper on file tangs.
2. Heating ends of round rods for heading or flattening operations.
3. Drawing temper on small drill shanks.
4. Annealing ends of cut lengths of copper and brass tubing.

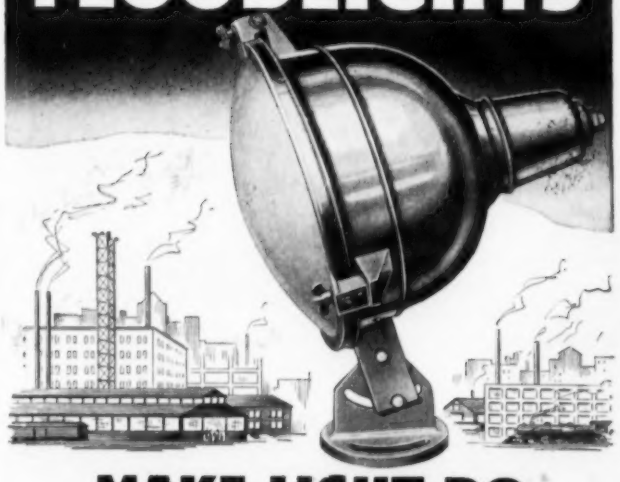
Note these features—high continuous production speeds—high gas economy—close temperature control—small space required—low first cost—low maintenance and—reasonably prompt delivery on the proper priorities and urgencies.

Ask for Bulletin 261.

MORRISON ENGINEERING CORPORATION
5005 EUCLID AVENUE • • CLEVELAND, OHIO
BUILDERS OF PRECISION HEAT-TREATING FURNACES AND FLASH BAKERS

▲ Mention Item NED-6228 when writing ▲

Permaflector FLOODLIGHTS



MAKE LIGHT DO *More Work!*

New Permaflector-equipped, enclosed floodlights pick up the Maximum Flux of Light and put it where you need and want it. Rugged, water-tight, weather and corrosion-resistant. Complete. Ready to set up. Write for literature.

PITTSBURGH REFLECTOR COMPANY
4-14 Oliver Building Pittsburgh, Pennsylvania
"Pittsburgh" Permaflector

▲ Mention Item NED-6229 when writing ▲

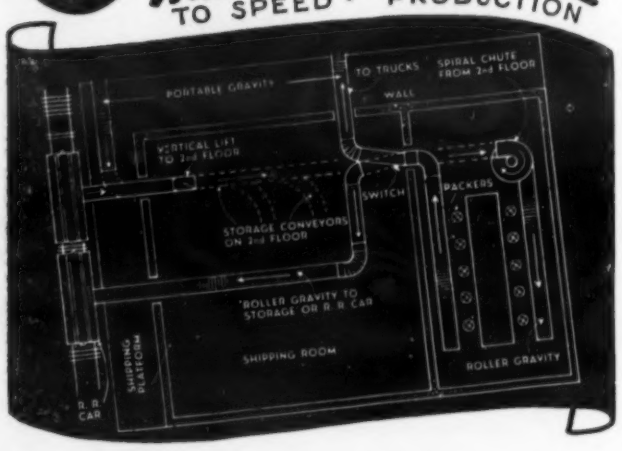
RYERSON CERTIFIED STEELS

Prompt Shipment from 10 Strategically-Located Steel-Service Plants... Principal products include—Alloy Steels, Tool Steels, Stainless Steel, Hot Rolled Bars, Hoops and Bands, Beams and Heavy Structurals, Channels, Angles, Tees and Zees, Plates, Sheets, Cold Finished Shafting and Screw Stock, Strip Steel, Flat Wire, Boiler Tubes and Fittings, Mechanical Tubing, Rivets, Bolts, Nuts, Washers, etc. Write for Stock List. Joseph T. Ryerson & Son, Inc. Plants at: Chicago, Milwaukee, St. Louis, Detroit, Buffalo, Cincinnati, Cleveland, Boston, Philadelphia, Jersey City.

▲ Mention Item NED-6230 when writing ▲

No.6 of a series

Handling Solutions TO SPEED PRODUCTION



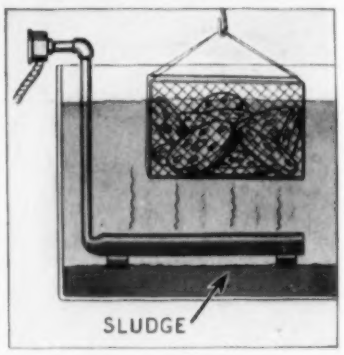
★ INCOMING MATERIAL from cars moves over Portable Gravity Sections to Vertical Lift to second floor where various spur lines of Roller Conveyor serve the storage area. Coming out of storage, or processing, material is lowered to first floor via Spiral Chute discharging to Gravity Packing Line. Gravity Roller Conveyor with a two-way switch forwards outgoing material to trucks, cars. Sketch typical only—there are variations. Write for book, "The Key." LOGAN, 215 Cabel, Louisville, Ky.

Logan Conveyors

▲ Mention Item NED-6231 when writing ▲

ELECTRIC HEAT valuable in cleaning and degreasing tanks

These tanks quickly collect a layer of sludge in the bottom. This naturally acts to insulate the bottom against heat applied beneath the tank. Chromalox portable immersion heaters put the heat *on top* of the layer of solid matter. A three-heat switch often meets all control needs, or thermostatically operated switch can be used, requiring no attention.



Electric heat with Chromalox units is speeding war production in all industries. Types for all purposes. Quick installation. Write for the Chromalox Catalog of Electric Heat. Tell us your specific heating problems.

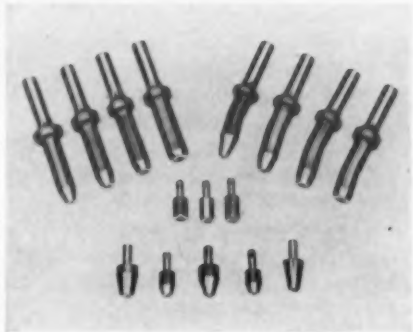
CHROMALOX *electric* IMMERSION HEATERS

come in a wide range of capacities. Portable types as shown above, and stationary types to be screwed through a boss welded to the tank wall, or bolted through gasketed flange. Both types are widely used in heating tanks of all sorts.

EDWIN L. WIEGAND COMPANY
7509 Thomas Blvd. Pittsburgh, Pa.

▲ Mention Item NED-6232 when writing ▲

AIRCRAFT RIVET SETS

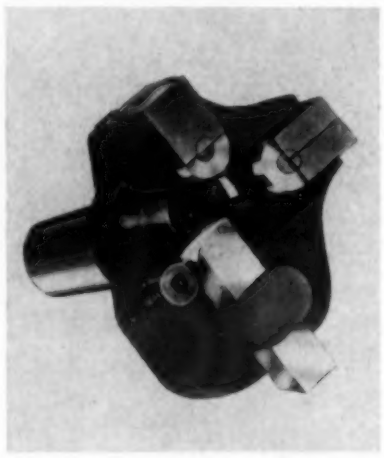


Practically every known type of rivet set used in aviation industry is now included in this Aerocraft line of rivet sets which has recently been broadened. All standard sizes of straight type head, brazier head, flat head and modified brazier head tools are available from 3/32 to ¼ inch in diameter.

Included in line are offset type rivet sets with round head, brazier head, flat and modified brazier head from 3/32 to ¼ inch; swivel type flush sets, straight flush rivet sets with 1¼ inch heads, and hand rivet squeezer sets in 3/32, ⅛, 5/32 and 3/16-inch round and brazier heads. Made by **Aircraft Tools, Inc.**, Dept. NED, 750 E. Gage St., Los Angeles, Calif.

▲ Mention Item NED-6233 when writing ▲

SCREW MACHINE TOOL



Adaptable for use with standard screw machines, this model B box tool is designed to take heavy cuts with sustained accuracy. It has swivelling tool bit and accurately adjusted rollers that make possible delicate adjustments with ease. Tool can be sharpened readily.

In addition to featuring rigid construction, generous space is provided for chips and coolant. These factors contribute to production of quality finished parts to close tolerances. Made by **Boyar-Schultz Corp.**, 2107 Walnut St., Chicago, Ill.

▲ Mention Item NED-6234 when writing ▲

Do You Know?

■ FIRST developed for complicated business machines, Gulf Plastic Petroleum B is now being used to lubricate magazines of Oerlikon anti-aircraft guns. Springs in magazines must be lubricated so as to function in all climates ranging from sub-zero Arctic regions to tropical South Pacific areas. This lubricant will adhere to metal parts, retain its lubricating qualities and not set. Developed by **Gulf Oil Corp.**, Pittsburgh, Pa.

▲ Mention Item NED-6235 when writing ▲

Palladium is available in sufficient quantities to furnish the jewelry trade with a satisfactory alternate for platinum. This metal is about as heavy as 14K gold and alloys are readily workable in all operations. Strength is about equal to that of iridio-platinum and finished jewelry has lasting brilliance without tarnish. Full information available from **Baker & Co.**, Newark, N. J.

▲ Mention Item NED-6236 when writing ▲

Development of a new non-magnetic manganese alloy will free 18 tons of nickel, chromium and tin for essential war uses through adaptation of this alloy to G-E products. Bars, rods and plates of this alloy are used in motors, generators, control equipment and switchgear for war equipment and war industries. Developed by **General Electric Co.**, Schenectady, N. Y.

▲ Mention Item NED-6237 when writing ▲

Having taper, resiliency and toughness of natural bristle, tapered Nylon paint brush bristles are claimed to be inert to paint ingredients. This product is available only for manufacture of paint brushes for military purposes. Nylon brushes for civilian uses must wait until the end of the war. Made by **E. I. du Pont de Nemours & Co.**, Wilmington, Del.

▲ Mention Item NED-6238 when writing ▲

Thermopane insulating glass has been channeled into stream of war production as multiple glazed units for mobile Army equipment. Other types of glass developed for war uses are bullet-resisting glass and golden plate glass, latter capable of filtering ultra-violet rays. Made by **Libbey-Owens-Ford Glass Co.**, Toledo, O.

▲ Mention Item NED-6239 when writing ▲

SKIN PROTECTION *in* INDUSTRY

● Increasing skin troubles of both men and women war workers is causing many lost production hours at a time when every minute counts.

Athea Protective Hand Lotion is an emulsion of pure edible olive oil and lanolin with glycerine a mechanical barrier and distilled water. No secret unknown ingredients—no waxes, gums or mucilages to clog the pores. Athea Lotion provides protection without suffocation.

The natural oils of the skin — so frequently lost through repeated washings in strong alkaline soaps are replaced. Grease and grime cannot become imbedded in the pores and fine wrinkles of the skin. A mechanical barrier protects the skin from the chemical irritants in common industrial coolants, cutting and lubricating oils.

Athea Protective Hand Lotion is manufactured in a cosmetic laboratory where the complete knowledge of the skin is an absolute essential.

Contact us for details on distribution among your employees. Liberal discounts offered to plant commissaries, medical departments, employee associations and other quantity purchasers.

ATHEA RESEARCH & PROCESSING LABORATORY
1560 W. Pierce St. • Milwaukee, Wisconsin

Protective ATHEA LANOLIN HAND LOTION

▲ Mention Item NED-6240 when writing ▲

TWO GREAT NAILS

Speed War Production

BUILD SUPER STRENGTH AND LONGER USEFUL LIFE INTO ALL TYPES OF WOODEN ASSEMBLIES—FROM TOTE BOXES TO BARGES —FREIGHT PALLETS TO SHIPS

STRONGHOLD
"ONE WAY" ANNULAR THREAD NAILS

or

SCREW-TITE
"ONE WAY" SPIRAL THREAD NAILS

These great nails have gone to war in the shipyards of the Nation—in its War Production Plants—in many projects of the Army, Navy and other War Agencies.

In War Production Plants—both Stronghold and Screw-Tite Nails are employed to build super-strong Tote and Shop Boxes, Carboy Cases, Pallets and Skid Platforms, Floors, Crates and Packing Cases for over-seas and long distance domestic shipments as well as for other wooden fabricated articles subject to hard use.

Stronghold and Screw-Tite Nails, hot galvanized, are used in shipyards for building various types of wooden boats and ships. Products formerly made of hard-to-get metals, are today re-designed for wood construction, employing these powerful fastenings in many ways.

If you require strong, fool-proof anchorage for freight car lagging or banding, here is the answer to your problem, for these Threaded Nails drive as easily as ordinary nails, but once driven Home—they stay for good—can't let go—back up or pop out.

Stronghold and Screw-Tite Nails are available in a wide variety of sizes, metals and finishes and can be furnished in hardened steel where hard woods or sheet metal must be penetrated.

Whatever your wood fastening problem may be, we will gladly help and without obligation send you a generous supply of nails for test purposes. Write today.

INDEPENDENT NAIL & PACKING COMPANY
BRIDGEWATER, MASSACHUSETTS

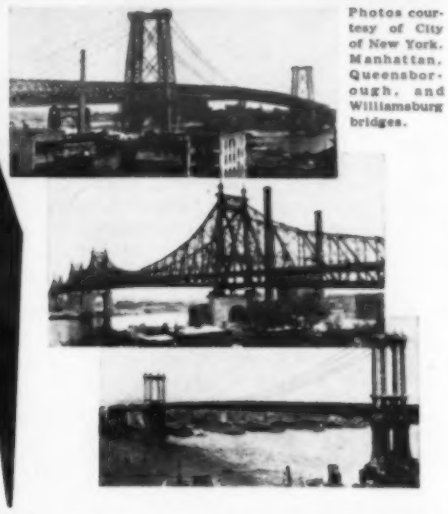
▲ Mention Item NED-6241 when writing ▲

Flash-Stone SPECIFIED!

THE IMMEDIATE USE FLOOR RESURFACER

FOR 3 OF NEW YORK CITY'S BRIDGES

THOUSANDS OF SQ. FT. OF Flash-Stone PROVED BEST IN HEAVY TRAFFIC TEST



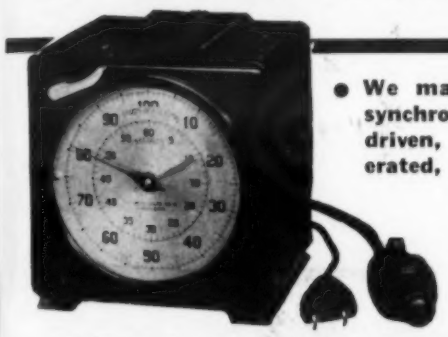
Photos courtesy of City of New York, Manhattan, Queensborough, and Williamsburg bridges.

Flash-Stone, the original immediate use floor resurfacer, beats all competition again — on 3 of America's toughest proving grounds. Put Flash-Stone to work on the floors and roads of your plant — patches or sections. Don't stop traffic, put Flash-Stone in, tamp or roll, and traffic moves over it in a matter of minutes. You'll get the best floor you ever had at any price. For indoor and outdoor use. Don't delay. Write today.

FLASH-STONE CO., INC. 1932 N. Twelfth Street Philadelphia, Pennsylvania

▲ Mention Item NED-6242 when writing ▲

What Time Intervals DO YOU NEED TO MEASURE?



● We manufacture synchronous motor driven, clutch operated, zero reset

PRECISION TIMERS

which you may control either by a manual switch or by apparatus custom built for your requirements.

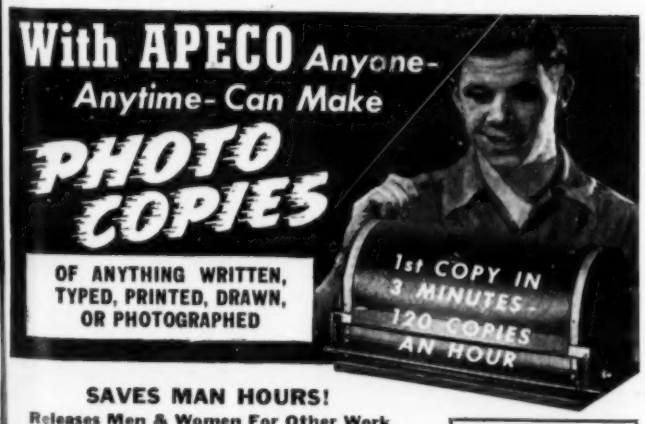
MODELS AVAILABLE AND TIME RANGES ARE:

S-100	reads in	1/5	seconds to	6000	seconds
S-10	" "	1/10	" "	1000	"
S-1	" "	1/100	" "	60	"
MSTE	" "	1/1000	" "	6	"
S-60	" "	1/5	" "	1	hour
SM-60	" "	1/100	minutes to	1	"
S-6	" "	1/1000	" "	10	minutes

THE STANDARD ELECTRIC TIME COMPANY
83 Logan St., Springfield, Mass. Branch Offices in Principal Cities
"STANDARD MAKES EVERY SPLIT-SECOND COUNT"

▲ Mention Item NED-6243 when writing ▲

With APECO Anyone-Anytime-Can Make PHOTO COPIES



OF ANYTHING WRITTEN, TYPED, PRINTED, DRAWN, OR PHOTOGRAPHED

SAVES MAN HOURS!
Releases Men & Women For Other Work

Speed production! Save hours and dollars now spent on copying and tracing originals. Get your copies without delays—made in a few minutes right in your own department.
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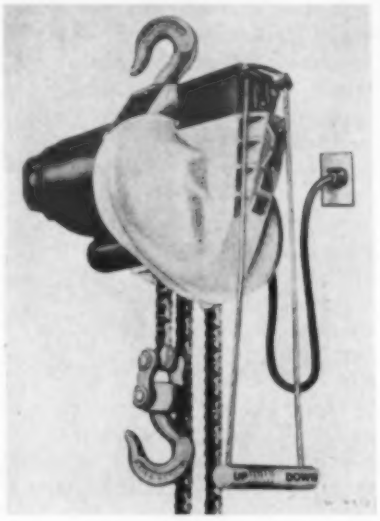
$55.00 F.O.B. CHICAGO WT. 10 LBS.

AMERICAN PHOTOCOPY EQUIPMENT COMPANY
2849 N. Clark St. Dept. PS-1 Chicago, Ill.

▲ Mention Item NED-6244 when writing ▲

SMALL ELECTRIC HOIST



Available in ⅛, ¼, ½ and 1-ton capacities, this line of Midget King electric hoists is adaptable to production lifting operations of all types. Made in both alternating and direct current models, this unit is completely portable. Being portable, it can be carried to any place in plant and operates from standard lighting or power circuits.

Features include lightness in weight, compactness and economy of operation. Control is effected by operating convenient handle. All units have been tested under conditions of 50 per cent overload. Made by **The Yale & Towne Mfg. Co.**, 4537 Tacony St., Philadelphia, Pa.

▲ Mention Item NED-6245 when writing ▲

CASTING RESIN

Adaptable for metal forming dies, jigs, fixtures and similar products, No. 7421 Liquid Resin is phenolic casting resin. This material can be cast readily at room temperatures through use of an accelerator.

Cast product is claimed to have compressive strength of 15,000 to 20,000 pounds per square inch; impact strength of 0.11 to 0.15 Izod; flexural strength of 7000 to 9000 pounds per square inch and modulus of elasticity in bending of 500,000.

Material is thermosetting and sets by baking at temperatures above 100 degrees Cent. By using accelerators, castings can be made at lower temperatures. Standard procedure includes baking for two hours at 140 degrees Fahr. Normal shrinkage is 0.003 in lacquered wooden molds after this bake. Made by **Durez Plastics & Chemicals, Inc.**, 1910 Walck Rd., North Tonawanda, N. Y.

▲ Mention Item NED-6246 when writing ▲

PRODUCTION INCENTIVE

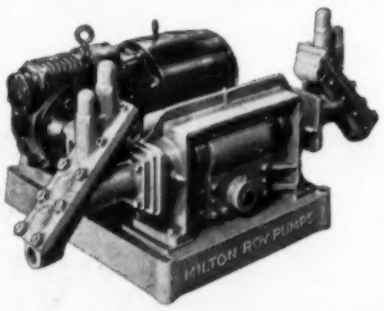
In form of red, white and blue decalcomania, this "Emblem of Victory" carries slogan, "Hi Buddy — Let's Get to Work for America." Attached to every machine tool turned out by this company, this label is designed to inspire machine operators and war workers in plants where machines will operate. It is expected that these emblems will serve as incentive to speed production.

Decalcomanias are available for attachment to all machines in plants, as well as for posting on bulletin boards, automobiles, tool boxes and similar locations where they will serve as constant reminders of the need for all-out production. Plan originated by **George Gorton Machine Co.**, 1103 Thirteenth St., Racine, Wis.

▲ Mention Item NED-6247 when writing ▲

SYNTHETIC LATEX PUMP

Developed especially for handling butadiene-styrene mixture which forms synthetic chemical rubber latex, this pump is of typical Step-Valve design with double ball checks.

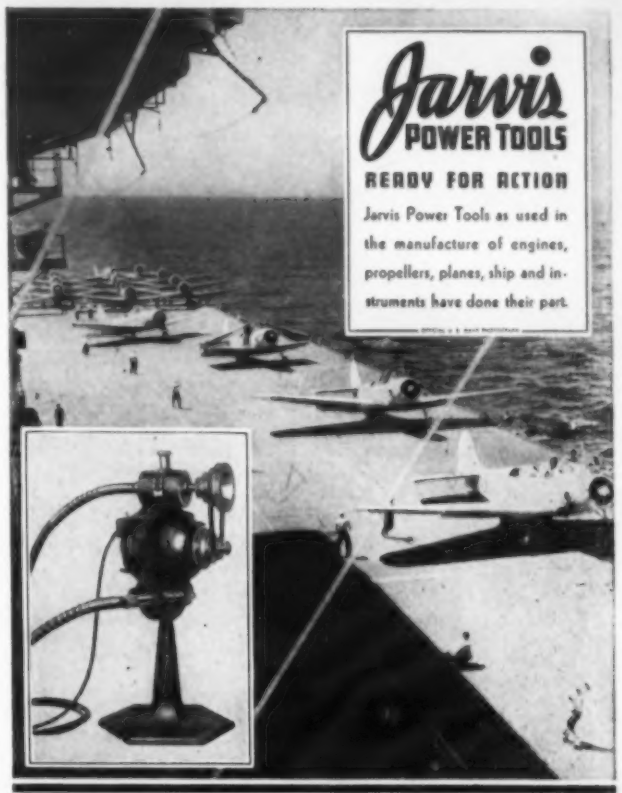


It has been modified slightly from standard units to enable latex to be handled with absolute minimum of turbulence. Discharge checks are spring loaded so that they will seat instantly and positively in pumping this viscous material.

Pump was developed over period of two years with cooperation of Goodyear engineers. Opposed-end duplex design utilizes suction pressure present in chemical mixing vessel and pumps against greater pressure on discharge side. Close plunger-stroke adjustment permits exact control of volume of latex handled, ranging from maximum capacity down to as little as one quart per hour. Sizes range in capacities up to 3000 gallons per hour.

Self-cleaning and non-clogging features minimize need for maintenance. Made by **Milton Roy Pumps**, 1304 E. Mermaid Ave., Philadelphia, Pa.

▲ Mention Item NED-6248 when writing ▲



THE CHARLES L. JARVIS CO., MIDDLETOWN, CONN.
TAPPING ATTACHMENTS · FLEXIBLE SHAFT MACHINES · GROUND ROTARY FILES

▲ Mention Item NED-6249 when writing ▲

AUTOMATIC HYDROMETER

Continously Records Densities!

Here's an invaluable aid to operating efficiency! The Foxboro Liquid Density Recorder gives exact knowledge of liquid density . . . even in flowing liquids. Furnishes continuous, accurate records *automatically!*

It's a permanent installation . . . not a fragile glass instrument. Records density on open scale chart . . . functions without operator's attention . . . easily read to small unit values. Accuracy unaffected by foam. Widely used in paper, food and chemical plants.

Also available for automatic control of density. Write for complete Bulletin A-264. **The Foxboro Company, 134 Neponset Ave., Foxboro, Mass., U.S.A.** Branches in principal cities of the United States and Canada.

FOXBORO Reg. U. S. Pat. Off. LIQUID DENSITY RECORDERS

▲ Mention Item NED-6250 when writing ▲

SWEEP WITH POWER

★ SAVE LABOR
★ SPEED CLEANING
★ RELEASE MORE MAN-HOURS FOR WAR PRODUCTION

ONE of these industrial sweepers will get floors cleaner, faster than a crew of several men, working with hand brooms or brushes. Works equally well on all types of floors—wood block, concrete, asphalt or composition. Does exceptional work—picks up fine and coarse material with equal efficiency. Sweeps from 35,000 to 50,000 sq. ft. an hour. Sprinkler system for dust control. Supplied with *special Steel Filtre Brush* for use on greasy floors.

IDEAL ROTO SWEEPER

Ideal Power Lawn Mower Co.
454 Kalamazoo Street,
Lansing, Michigan.
Please send data on industrial sweepers.
Individual .....
Firm .....
City..... State.....

▲ Mention Item NED-6251 when writing ▲

PRACTICAL DATA FOR PRESENT PROBLEMS

Here are two books designed to help users of Molybdenum steels and irons to conserve all alloying elements, and possibly steel and iron, by getting the most in the way of strength, toughness and wear resistance with the lowest alloy content.

"MOLYBDENUM IN STEEL" covers the fundamental metallurgy of Molybdenum steels. Heat treatment – physical properties – applications – of a number of these steels are treated at length.

"MOLYBDENUM IN CAST IRON" covers the effect of Molybdenum in gray iron, giving suggested analyses for practical applications and detailed discussion of high strength (60,000 p.s.i. and up) irons.

Both books will gladly be sent without charge on request.

Climax Mo-lyb-den-um Company
500 Fifth Avenue · New York City

MOLY

▲ Mention Item NED-6252 when writing ▲

● *Right equipment* all the way from furnace to finished casting helps to gear this foundry to automatic accuracy . . . thus assuring topmost Quality and Uniformity. For any requirement from 6 oz. to 6 tons, use Unitcastings. They're better!
Unitcast Corporation . . . Toledo, Ohio.

UNITCAST CORPORATION

ALLOY AND CARBON ELECTRIC STEEL CASTINGS

▲ Mention Item NED-6253 when writing ▲

An easy, quick and economical way to make CUTTING TOOLS

This method is made practical by the exceptional strength of joints brazed with EASY-FLO — joints proved as good as solid metal. Cutting strains and grinding strains won't bother that EASY-FLO joint. The lower illustration shows the tool steel ground and used right down to the shank.

Try this method in your own shop and see how easy and quick it is, and what excellent tools it produces. If you want further information, write us.

And for mounting cemented carbide tips you can't beat EASY-FLO No. 5. Details in Bulletin No. 11.

USE EASY-FLO ALSO FOR YOUR OTHER METAL JOINING

Bulletin No. 12 gives full details. Write for a copy.

HANDY & HARMAN 82 FULTON ST., NEW YORK
Agents in Principal Cities. In Canada: HANDY & HARMAN of Canada, Ltd., Toronto.

▲ Mention Item NED-6254 when writing ▲

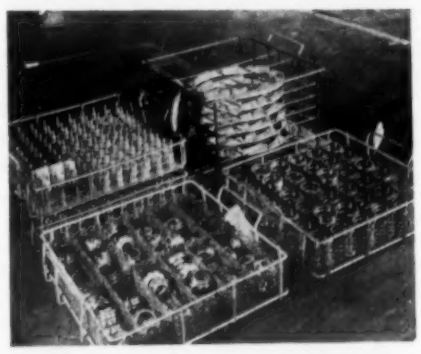
MASKING STICKERS

Particularly effective in masking small areas of castings, stampings or other parts in which areas are not to be coated with finish or are to be protected during processing, Kum-Kleen stickers are finding w i d e application. These stickers may be applied without moistening to metal, glass, plastic, wood or any other smooth surface. Self-adhesive backing assures secure application to masked area, yet permits material to be peeled off easily after operation has been completed, without tearing or marring surface.

Standard sizes of these labels may be adapted to many normal masking jobs, such as shown in illustration. In addition, special sizes and shapes can be furnished to specifications to fit irregular or other than standard applications. Considerable time can be saved through use of masks which have been pre-cut to required size and shape. Made by **Avery Adhesives**, Dept. NE-12, 451 E. Third St., Los Angeles, Calif.

▲ Mention Item NED-6255 when writing ▲

DEGREASING BASKET COATING



Especially developed for coating wire transporting a n d degreasing baskets, this Resistoflex solution is modified polyvinyl alcohol resin in solution form. Material dries to t o u g h, resilient, solventproof a n d abrasion resistant coating that will not tarnish or otherwise injure highly finished metal parts. Baskets can be coated in user's shop by first dipping and then passing them through drying oven.

Use of coating permits use of wire baskets in which contents are visible when stacked, in place of usual solid wooden boxes. Same solution is used in large war plant to coat worker's shoes which are constantly exposed to cutting oils and solvents that are injurious to leather. Made by **Resistoflex Corp.**, Belleville, N. J.

▲ Mention Item NED-6256 when writing ▲

TOOL CONSERVATION

As part of continuing program of tool conservation, this American Workman's Wartime Pledge card is available to all industries. Pledge requires no signature and is intended to become completely voluntary act on part of workman. Every employee who accepts this card pledges that "As a soldier in our mighty production army, upon whose skill and unstinting labor the lives of millions and the freedom of all depend, I pledge that—I will take care of my tools and machines. I will help and instruct my fellow workmen whenever I am able. I will waste neither time nor materials, to the end that all of America's productive resources may be dedicated to final and complete victory. I will do my best." Cards are available free in any quantity desired by writing to **The Koebel Diamond Tool Co.**, 9462 Grinnell Ave., Detroit, Mich.

▲ Mention Item NED-6257 when writing ▲

LATHE CENTER LUBRICANT

Used for lubricating dead centers on lathes, this product is combination of flake lubricating graphite and formulated ingredients which will withstand high pressures and temperatures developed in this application. I t i s claimed to effectively c o n t r o l overheating and protect dead centers against scoring or softening. It will reduce wear at dead center and minimize spoilage of work. Material also has many applications as anti-seize compound where lubricant of extreme film strength is required. It may be used by metal or wood working plants. It is supplied in 1, 4 and 8-ounce capacity collapsible tubes. Made by **Joseph Dixon Crucible Co.**, Dept NED, Wayne & Monmouth Sts., Jersey City, N. J.

▲ Mention Item NED-6258 when writing ▲

Castolin Eutectic **LOW TEMPERATURE WELDING**

IMPROVED METHOD FOR WELDING CAST IRON
★
Write for 36 Page Book!

WAR plants the country over rely on Castolin Eutectic Alloy No. 14* (for gas welding) and Castolin Eutectic Alloy No. 24B* (AC-DC metallic arc) for easy, reliable welding and reclaiming of broken, cracked, worn, or defective castings. These new low temperature welding alloys give a completely machinable, color matching weld—free from stresses and distortion.

Use Castolin Eutectic Low Temperature welding alloys No. 14 and No. 24B* in place of "hard-to-get" bronze welding rods. Castolin Eutectic Alloys No. 14* and No. 24B* contain no scarce metals . . . available with priority A9.*

Cast Iron covers salvaged with Castolin Eutectic Low Temperature Alloys.

* Patented

Some Territories Available for Manufacturers Representatives

EUTECTIC WELDING ALLOYS CO.
40 Worth St., New York, N. Y.

▲ Mention Item NED-6259 when writing ▲

Here Is the Newest . . .

"Empco JACK"

The illustrations tell much of the story. Designed to align themselves to the most uneven of floors; slip-ways are ground to minimize friction at point of contact with machine base. Positive two-way adjustment with increased limits. Simplest method of setting, and keeping equipment LEVEL. Turn the "hex" screw head and presto!—a level adjustment as precise as wanted.

AVAILABLE IN 3 SIZES:
No. 1—2" x 2 9/16" x 4 1/2"
No. 2—2 3/8" x 3" x 6 1/8"
No. 3—3 1/8" x 4" x 8 1/2"

PROMPT DELIVERY

EMPCO

Write for full particulars to:

THE ENTERPRISE MACHINE PARTS CORPORATION
2727 JEROME AVE. DETROIT, MICH.

▲ Mention Item NED-6260 when writing ▲

ARE YOU GUILTY

of sabotaging your own plant? Are you letting skilled men slip and fall? Do greasy floors cut down efficiency and cause needless fire hazards? Control this executive sabotage with Speedi-Dri floor treatment. Speedi-Dri scatters easily, absorbs grease, reduces fire hazard, gives anti-skid surface, protects irreplaceable men and machines. Unique, new, proved in hundreds of war plants. Cuts insurance rates. Write for literature or demonstration on

SPEEDI·DRI*
OIL AND GREASE ABSORBENT

* Pat. Pending

East:
REFINERS LUBRICATING CO., N. Y. C.
S & W: WAVERLY PETROLEUM PRODUCTS CO., PHILA., PA.

▲ Mention Item NED-6261 when writing ▲

for SPEED AND ACCURACY

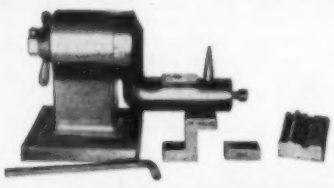
NEW LAPPING PLATE

Diamond pattern gives superior cutting action. Deep, sharp 1/16" grooves provide long life. Plates should be bought in pairs; easily reconditioned by lapping one plate against another. Used for accurate work requiring close tolerances.

Size 8" x 12½" x 2½"

UNIVERSAL RADIUS DRESSER

Dresses surface grinding wheels to either convex or concave radii of quarter-tenth accuracy. Will improve the radii on your gauges, grinding formers, form tools, punches and dies. Sets up quickly. Will clear 7½" grinding wheel.



QUICK SERVICE

Prompt deliveries under reasonable priorities. Send for Bulletin NE and prices.

THE AMERICAN GAUGE CO.
125 Bayard Street DAYTON, OHIO

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No. 477-Y SET

Every possible handle hookup from midget sliding bar to heavy duty 6" head ratchet. 28 Double Hexagon sockets from ¼" to 1⅝".

No tight or sloppy wrench sizes . . . no slipping or chewing the nut . . . no lost motion when Snap-ons serve your production or maintenance departments. For these fine tools are built to meet the stiffest industrial requirements . . . to save seconds that pile up into hours of work cut from costly operations. 22 years of tool design leadership, the finest steels, precision manufacture to closest tolerances go into the making of every Snap-on tool . . . your assurance of dependability in every application. For catalog of over 3,000 tools and information, write . . .

Snap-on Tools
THE CHOICE OF BETTER MECHANICS

SNAP-ON TOOLS CORPORATION
8042-L 28th Avenue Kenosha, Wisconsin

▲ Mention Item NED-6263 when writing ▲

Reg. U. S. Pat. Off.

UNBRAKO

Self locking HOLLOW SET SCREWS with the Knurled Points

DIG IN

When tightened as usual, the knurled points of "Unbrako" Self-Lockers "dig in" and hold tight against vibration and jarring. Yet they can be easily "backed out" with a wrench and used again. "Unbrako" Self-Locking Set Screws are precision made and have amazing strength.

Pat'd and Pats. Pend.

Knurling of Socket Screws originated with "Unbrako" years ago.

Write for the "UNBRAKO" Catalog—today.

Sizes: No. 4 to 1½" diameter

STANDARD PRESSED STEEL CO.
JENKINTOWN, PENNA. BOX 581
—BRANCHES—
BOSTON • DETROIT • INDIANAPOLIS • CHICAGO • ST. LOUIS • SAN FRANCISCO

▲ Mention Item NED-6264 when writing ▲

PAINT SPRAY BOOTH

Featuring side and rear water impingement walls, this single compartment Aqua-Restor paint spray booth assures high percentage of pigment reclamation. Water washed walls, through use of continuous and pressured flow, are claimed to afford maximum protection in spraying operations of all types. Employee health is protected and fire hazards are held to minimum.

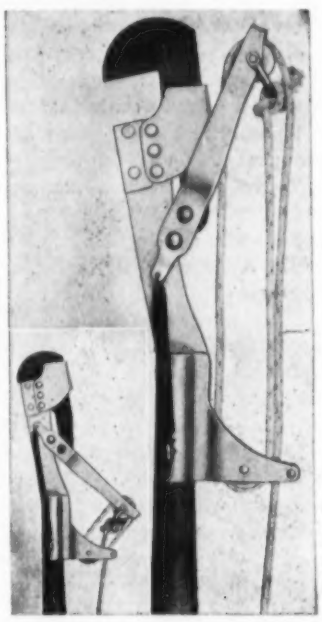
Because no spray nozzles are used, only low horsepower is required for water circulation and there is no possibility of system becoming clogged. Moving parts are held to minimum. Used water may be drained directly or pumping can be arranged for remote disposal.

Model illustrated is equipped with turntable and fluorescent lighting, available in single or multiple units. Other designs and sizes using water-wash principle are engineered to meet specific requirements. Made by **Mayer Mfg. Corp.**, Aqua-Restor Div., 45 Division Place, Brooklyn, N. Y.

▲ Mention Item NED-6265 when writing ▲

SAFETY WIRE CUTTER

Hot electrical wires can be cut at safe distance with this Longrange cutter. Device is of different design than short, conventional, double handled wire cutter which requires close proximity of operator and danger from falling wires after they have been cut.



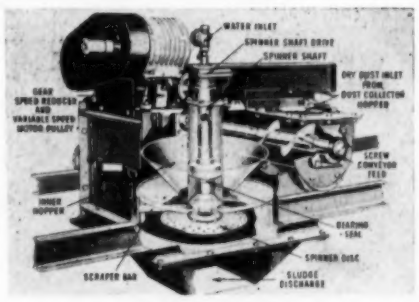
Tool will handle either energized or uncharged lines. Slotted jaw holds wire by gravity until cut is made. Wire cannot escape because jaw closes at outside first. Cutting action is inward from outside. Opening of 1½ inches permits cutting of heavy insulated wire ranging up to No. 4 hard drawn copper cable.

Two 4-foot sections of fir or spruce comprise handle, being insulation tested to 75,000 volts per foot. Cutting action is controlled by operation of non-conducting rope. Cutting jaw is of alloy steel with tensile strength of 296,000 pounds per square inch. If jaw becomes burned through use, blade can be replaced within 30 seconds. Made by **American-La France-Foamite Corp.**, 700 Erie St., Elmira, N. Y.

▲ Mention Item NED-6266 when writing ▲

DUST COLLECTOR FEED

Added to standard Wet Disposal unit, this screw conveyor feed provides constant and uniform rate of feed of discharged dust from dry type dust collectors into sludge forming device. Wet disposal unit is designed to make wet sludge from dust discharged from hoppers of dry type dust collectors by centrifugally mixing accumulated dust with water or other liquids. This is accomplished so quickly that there is no possibility for dust to disperse into atmosphere.



Dust, which falls from dust collector hopper through flexible coupling, is deposited directly into screw conveyor of disposal unit. Rate at which dust is then fed into mixing chamber can be controlled by gear speed reducer and variable speed motor pulley.

At same time dust enters unit, water or other liquid is discharged at center of high speed mixing disc, causing instantaneous mixing of the two. Sludge formed is discharged at bottom of unit. Any desired consistency of sludge can be had by controlling volume of dust and water fed into unit. Made by **American Foundry Equipment Co.**, 508 S. Byrkit St., Mishawaka, Ind.

▲ Mention Item NED-6267 when writing ▲

BROWNING Oil proof GRIPBELTS

NO RUBBER · ALL SYNTHETIC GUMS

OIL PROOF
IMPERVIOUS TO OILS WHICH DETERIORATE RUBBER V BELTS.

HEAT RESISTANT
CAPABLE OF WITHSTANDING HIGHER TEMPERATURES THAN RUBBER V BELTS.

NON SPARK
CONDUCT ELECTRICITY AND DO NOT BUILD UP DANGEROUS STATIC CHARGES.

NOW AVAILABLE from STOCK
WRITE for CATALOG

BROWNING MANUFACTURING Company
INCORPORATED
MAYSVILLE, KENTUCKY, U. S. A.

▲ Mention Item NED-6268 when writing ▲

STRONG LINKS
in the world's greatest production schedules

Herc-Alloy Steel Chain with the patented "Inswell" electric weld is helping America maintain the world's greatest production schedules by providing safety and efficiency in the transportation and handling of materials. Fabricated from a special analysis heat treated alloy steel, the short, stubby links bridge square corners without gouging or kinking. *Get all the facts on Herc-Alloy Chain, today.* Descriptive catalog No. 44 sent on request.

CM HERC-ALLOY STEEL CHAIN

COLUMBUS-McKINNON CHAIN CORP.
Affiliated with Chisholm-Moore Hoist Corporation
TONAWANDA, NEW YORK
BRANCH OFFICES: NEW YORK • CHICAGO • CLEVELAND

▲ Mention Item NED-6269 when writing ▲

When You're Cramped for Space
USE THESE VERY LIGHT INCH SERIES BEARINGS

HAVING bores abnormally large, as compared with the outside diameter, they offer the engineer such important advantages as *compactness, light weight and greater latitude in design.*

They are available in ball bearing sizes from ⅛" to 21" bore, and in roller bearing sizes from 1½" to 21" bore.

Write for the Catalog. Let our engineers work with you.

"NORMA-HOFFMANN"
PRECISION BALL, ROLLER AND THRUST BEARINGS
NORMA-HOFFMANN BEARINGS CORP'N — STAMFORD, CONN., U. S. A.

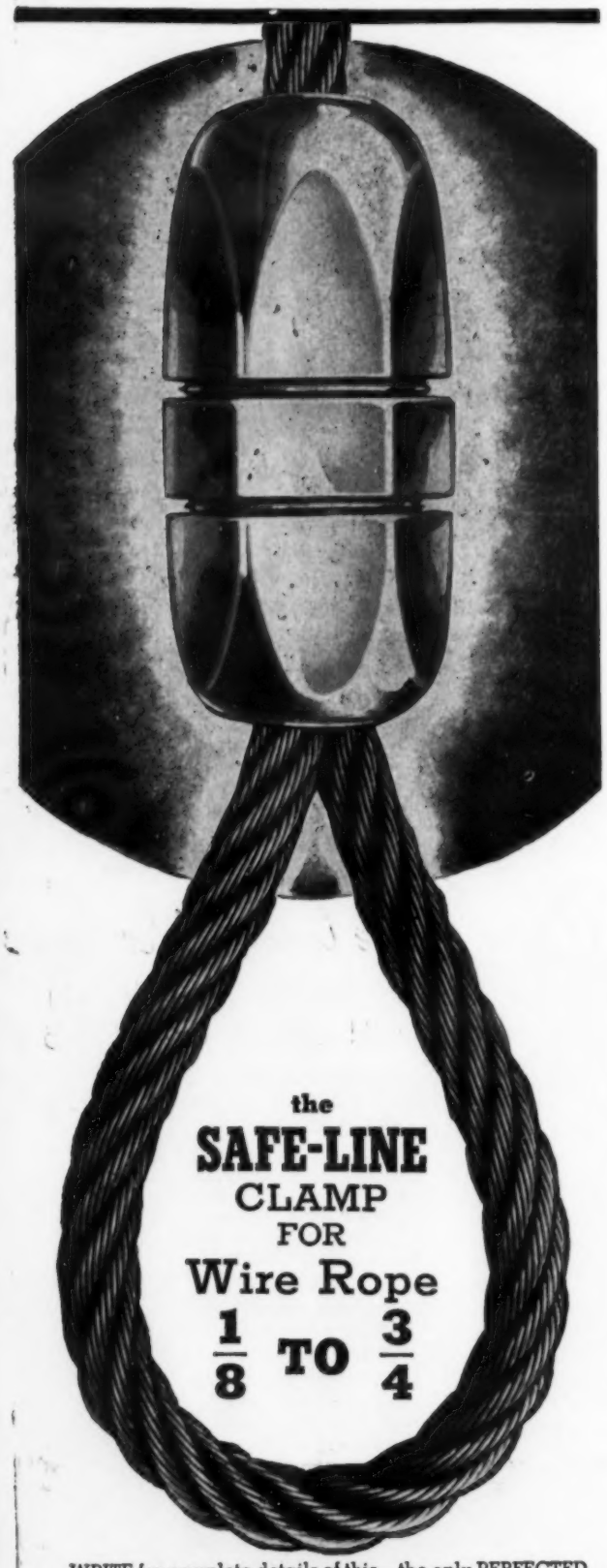
▲ Mention Item NED-6270 when writing ▲

Where to use . . . DUPOR No. 10
CHEMICAL CARTRIDGE RESPIRATORS

New COLORED PLASTIC cartridges replace metal and cardboard types—are more sturdy—won't crush and spill contents—are non-corrosive tool Use—
CODE A (Soda-Lime) White Plastic, for light concentrations of inorganic acid gases often found in bleaching, disinfecting, refrigerating.
CODE B (Activated Charcoal) Black Plastic, for metal brazing, paint and lacquer spraying, light concentrations of organic vapors, etc.
CODE AB (Soda-Lime and Activated Charcoal) Yellow Plastic, for use on pickling and smelting processes, the manufacture of leather, textiles, dyes, ink, soap, etc. Wherever combinations of acid gases and organic vapors are present in light concentrations.
PRICE $54 doz. Sample postpaid $4.50. Indicate Code desired!

H. S. COVER, Chippewa St., South Bend, Ind.

▲ Mention Item NED-6271 when writing ▲



WRITE for complete details of this—the only PERFECTED wire rope clamp on the market. One clamp is guaranteed to hold any wire rope made. Hundreds of thousands used by manufacturers and the armed forces.

NATIONAL PRODUCTION CO.
DEPT. A, 4603 ST. JEAN DETROIT, MICH.

▲ Mention Item NED-6272 when writing ▲

SPARE PARTS BOX

Made to specifications in wide variety of sizes to suit practically any requirements, these Army and Navy spare parts boxes are of all welded construction. In addition to being

fitted with hinged cover, as shown, this line of boxes has drop handles at each end to facilitate carrying. Hasp affords means for locking through use of padlock. Standard construction uses 20-gage steel. Quick delivery schedules are being maintained on these boxes, according to manufacturer. Made by **American Metal Works, Inc.**, 1503 Germantown Ave. Philadelphia, Pa.

▲ Mention Item NED-6273 when writing ▲

WEIGHING CONTROL

Batch weighing, container filling and many other automatic weighing operations can be stepped up in speed and accuracy through use of this automatic photo-electric cut-off unit on standard or special scales. Because of compactness and simplicity of design, control can be incorporated within or on structure of scale. Application can be made by either user or manufacturer of scale.

Equipment consists of scanner which is small housing containing light source, photocell and amplifier tube, and control in second housing containing amplifier and relay. Scanner is mounted so that its position is adjustable for operation throughout indicating range of scale.

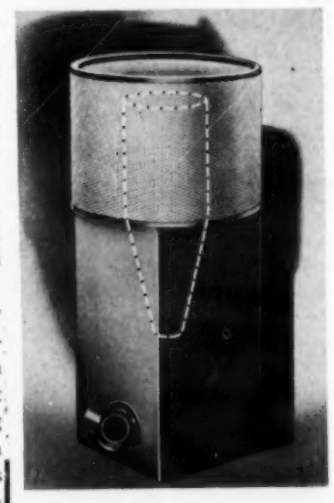
Scanner position is adjusted to point at which actuation of control is desired. Weighing operation is initiated. Light source projects beam of light to scale face, which light may or may not be reflected back to photocell. When indicating pointer intersects light beam, fluctuation is caused in quantity of light reaching photocell. This causes impulse to operate relay which in turn actuates control mechanism.

This same cut-off unit may be applied to meter field or to any instrument which has indicating scale. Control can be maintained within two predetermined maximum and minimum limits by use of two scanner heads. Temperature, speed, weight, current, liquid flow or any quantity measurable on indicating instrument can be controlled.

Accuracy of control is limited only by precision of instrument to which it is applied. Sensitivity is such that adjustment of position of scanner provides operational control at exact point desired. Made by **United Cinephone Corp.**, Dept. 1-4, Torrington, Conn.

▲ Mention Item NED-6274 when writing ▲

CYCLONE DUST COLLECTOR



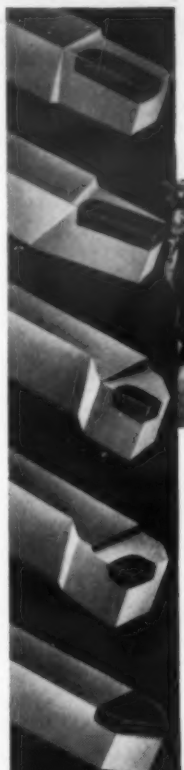
Completely self-contained, this model No. 1250 Dustkop dust collector has capacity of 1250 cubic feet of air per minute and operates upon cyclone-filter principle. It is adaptable for use with large wheel buffers, polishers and grinders, or with small wheel equipment, when latter is grouped.

Unit can be moved easily from one machine to another, or with device to which it is connected. It is not connected with any existing centralized dust collection system. Installation involves no sheet metal work in the form of ducts and no tools are required for attaching it to machines. Except for connecting hose, unit is supplied complete and ready for operation.

Cyclone, indicated by dotted lines, collects large percentage of dust and dirt drawn into unit. In addition, spun glass filter is employed to remove fine particles which may pass through cyclone. Multi-bladed fan, directly connected to 1½ horsepower motor, draws air through cyclone and filter before exhausting it to working space. Dirt and dust removed from air is deposited in removable container.

Occupying floor space of only 20 by 28 inches, this dust collector can be located adjacent to machines with little or no crowding. Device is available with either one or two-way intake ports for connecting to equipment with flexible metal hose or pipe. Suitable motor for standard alternating or direct current operation can be supplied. Made by **Aget-Detroit Mfg. Co.**, 2045 Book Tower, Detroit, Mich.

▲ Mention Item NED-6275 when writing ▲



They may all start together—but they don't stay together!

All carbides may look alike to a user at the start, but eventually one will nose out in front. Even a slight difference in cutting qualities may make a big difference in output, in today's production race. Many leading metal-working plants have found that TECO CARBIDE TOOLS hold their edges longer, cut at higher speeds and produce more pieces per grind than any similar material.

Recently increased facilities have tripled our output of carbides and doubled tool production, permitting exceptionally prompt shipment. Tell us your needs.

TUNGSTEN ELECTRIC CORPORATION • 569 39th St., Union City, N. J.
Branch Office: 2906 Euclid Avenue, Cleveland, Ohio
Representative: Architects and Builders Bldg., Indianapolis, Ind.

TECO Pioneers in Tungsten Carbides for over a Quarter Century **CARBIDE TOOLS**

▲ Mention Item NED-6276 when writing ▲

★ **HANDY LYON**

Convenient Hydraulic Foot-Pedal Control

***Hydraulic* Elevating Table**

For Die Handling, Transferring Heavy Parts, Leveling Work, and Positioning

Use this new LYON Hydraulic Elevating Table for all sorts of shop work—it's easy to wheel about from job to job. Handy for moving dies . . . transferring heavy parts from machine to workbench . . . leveling extended work . . . positioning parts in assembly. And it's all operated *hydraulically*. Convenient foot-pedal control leaves users' hands free, makes it safer to use. Complete stability on a wide, firm base. Write us *today* for prices! Ask for Circular No. 124.

LYON Hydraulic Welding Positioner

360° Revolving Top — Elevates a Full 14"

Sturdy—dependable—this LYON positioner has a 2000 pound capacity. 30" x 30" top that both lifts and pivots. Complete foot-control at all times . . . fully hydraulic operation that keeps joints to be welded within operator's easy reach for real efficiency. Write now for Circular No. 129.

LYON-*Raymond* Corporation
Formerly LYON IRON WORKS *Established 1840*
202 Madison Street Greene, N. Y.

▲ Mention Item NED-6277 when writing ▲

RED GIANT *Liftrucks*

TO SPEED WAR PRODUCTION IN YOUR PLANT
May Be Operated by Women

Speed up the handling of your raw materials and finished products by installing RED GIANT LIFTRUCKS and REVOLVATOR ELEVATORS for your heavy lifting, piling, tiering and stacking. There's a size and type of each to meet your specific needs. Save time; save space; save labor; save money.

Send TODAY for Bulletin NED

REVOLVATOR CO.
DESIGNERS AND MANUFACTURERS OF MATERIAL HANDLING EQUIPMENT
2032 86th St. NORTH BERGEN, N. J. Since 190

▲ Mention Item NED-6278 when writing ▲

SHOCK-PROOF PUMP

(Prompt Shipment)
Variable Delivery
and
"Standard" Mounting

● Infinitely variable delivery ranging from 0 to 8 gpm., at operating pressures up to 2,000 lbs. psi., and a type of mounting that is considered as "standard" by most manufacturers of hydraulic pumps are features of the Dual-Vane type hydraulic pump.

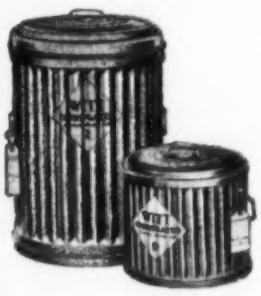
Designed especially for low volume—high pressure performance, the pump is virtually shock-proof. It will operate up to 3,500 lbs., psi for short intervals and is completely balanced. Vanes of unique and patented design permit additional balancing for elimination of overheating, and for automatic compensation for wear. The "standard" mounting, together with prompt shipments, permit the immediate adoption of the pump for either new equipment or as replacement for existing pumps. Drive shaft of 1 1/16 inch diameter extends 1 1/16 inches beyond housing. Rotation: Either rotation is available. Housing is of specially cast bronze. Rotor, stator, vanes etc., are of hardened and ground steel. Oil line connections are for standard SAE fittings. Adjustment for variation in delivery is by means of screw on outside of the housing.

Hydra-Motive Div., 735 E. Milwaukee Ave., Detroit, Mich. **Advt.**

▲ Mention Item **NED-6279** when writing ▲

WITT Cans

for longer service



Uncle Sam has been calling for more and more WITT Can production. Consequently civilian supplies have had to be curtailed.

Witt Cans outlast from 3 to 5 ordinary cans. Their usefulness can be further extended by better care in service. Help us help U.S. Give your WITT Cans the attention they deserve.

HELPFUL SUGGESTIONS HOW TO CARE FOR WITT CANS

Paint Cans inside with asphaltum paint.

Paint name or symbol on cans and lids—prevents loss or theft of cans, and helps to identify them.

Never sprinkle or wet ashes before putting them in cans. Ashes contain sulphur and when wet, a mild sulphuric acid is formed.

The **WITT CORNICE** *Co.*
WINCHELL AVE.
CINCINNATI, OHIO

▲ Mention Item **NED-6280** when writing ▲

Save MAN-POWER with DRACCO PNEUMATIC CONVEYORS

If your production calls for moving grains, chemicals or granular materials from receiving point to storage, from storage to point of operation, why not consider the MANY advantages offered by DRACCO Pneumatic Conveyors? One very important feature is the saving of man-power. In many installations a DRACCO Pneumatic Conveyor with ONE man is now doing the work that formerly required SEVERAL men. DRACCO Engineers have reduced handling costs for many — why not consult them about your problem?

Write for Bulletin No. 526

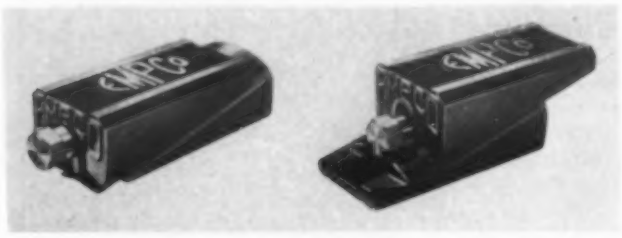
DRACCO CORPORATION
Successors to The Dust Recovering & Conveying Co.
4653 E. 116th Street, Cleveland, Ohio New York Office: 130 West 42nd Street

PNEUMATIC CONVEYORS • DUST COLLECTORS

▲ Mention Item **NED-6281** when writing ▲

MACHINE LEVELING JACKS

Providing accurate and easy level adjustment for machine tools, industrial furnaces, large surface plates and large assembly fixtures, these Empco machine leveling jacks have been



improved in design. Positive two-way adjustment and increased limits are afforded. Slipways are ground to minimize friction at point of contact with machine base. Units will align themselves to uneven floors.

Consisting of two iron castings and shouldered screw, jacks are adjusted by turning screw. This causes casting to slide up or down, as desired, on lower casting. Inclined plane principle is used to raise or lower base of machine which is placed upon set of jacks. Machines may be leveled by using level gage on machine and adjusting jacks with simple wrench turns. Made by **Enterprise Machine Parts Corp.,** 2727 Jerome Ave., Detroit, Mich.

▲ Mention Item **NED-6282** when writing ▲

WELD SPATTER PREVENTIVE

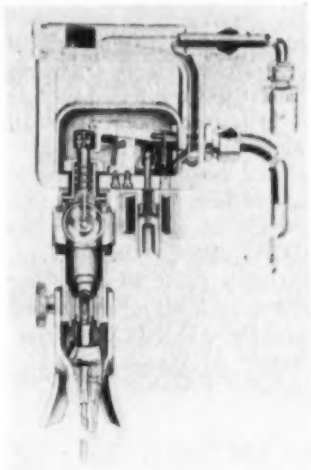
Applied by brush on surface surrounding and including joint to be welded, Anti-Spatter is claimed to increase production and afford better appearing welds. It may be used on any metal that can be arc welded. Fusion of spatter to surface is prevented. It does not injure metal.

Wiping joint with wet rag or use of normal degreasing procedure is all that is needed if weld is to be painted over. Otherwise, compound and spatter can be removed by wiping with dry rag.

Product is non-inflammable and non-toxic. It has no disagreeable odor. Smooth, closely knit welds can be formed. Weld rust is practically eliminated. Made by **The Wolfe-Kote Co.,** 2224 N. Seventh St., Sheboygan, Wis.

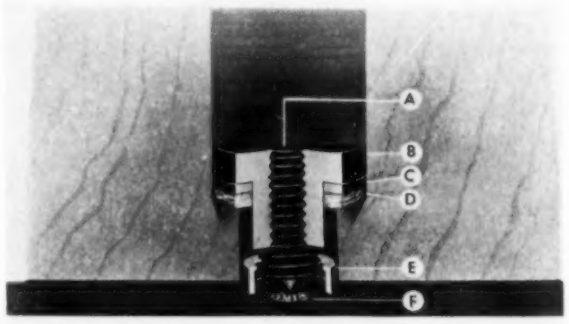
▲ Mention Item **NED-6283** when writing ▲

STUD WELDING PROCESS



Though especially designed for use in ship deck work, this stud welding process fully meets requirements of many other uses calling for end-welding of steel sections to metal surfaces. Equipment is fully automatic in operation and perfect welds are obtained consistently without long experience or training of operator.

Equipment consists of stud gun, control cabinet, conductor cable and other accessories, which are used in conjunction with standard direct current welding machine. Stud gun permits combination of arc welding with impact or forge welding. Duration of arc is automatically controlled by electric timer in control cabinet. At exact instant molten



crater has been formed, gun plunges stud into place into molten metal and holds it for precise position.

Up to 150 studs can be welded in one hour. Operator simply cocks gun, places it in position and presses pistol grip trigger. When entire welding cycle has been completed automatically, gun is withdrawn. Top illustration shows section through stud gun.

In sectional illustration showing welded stud joint, (E) is ferrule which is dropped into hole in decking and serves to shield planking and stud threads from flare of arc. Measured spoon of arc inducing material (F) is poured inside ferrule. Cocked and stud-loaded gun is located over hole, and trigger is pressed. Stud (A) is securely welded to deck plate. Stud is now ready for fastening. Shipwright applies special nut (B) fitted with grommet (D) and washer (C). Forked T-wrench tightens nut. Wood plug and white lead seals hole.

Equipment is easily adjusted for various thicknesses, stud lengths and diameters. Made by **National Cylinder Gas Co.,** 211 W. Wacker Dr., Chicago, Ill.

▲ Mention Item **NED-6284** when writing ▲

Micromax Pyrometer Helps Smelting Control

The problem of how to help a furnace operator hold a furnace within the close temperature limits required for certain war work, was solved by the Round Chart Micromax Pyrometer shown above. The temperature recorded comes from a Rayotube radiation-detector. This is focused on the material in process, so that the material is, in effect, reporting its condition directly to the man. With this report before him and the fuel valve at his hand, the operator is securing a uniformity never before achieved.

LEEDS & NORTHRUP COMPANY, 4905 STENTON AVE., PHILA., PA.
LEEDS & NORTHRUP
MEASURING INSTRUMENTS · TELEMETERS · AUTOMATIC CONTROLS · HEAT-TREATING FURNACES
Jrl Ad N-33B-645(1)

▲ Mention Item **NED-6285** when writing ▲

IMMEDIATE SHIPMENT

STEEL BOXES

for your Production Needs

SHOP BOXES
STRAIGHT EDGE

A Straight Side Shop Box with drop handles each end. An excellent general purpose shop box where stacking feature is not required.

No. 201 6" x 9" x 3½"—20 ga. ..... 40c Each
No. 202 8" x 12" x 4"—20 ga. ..... 45c Each

STACKING BOXES

An ideal all purpose shop box with drop handles each end. Sturdy all-welded construction.

No. 301 6" x 9" x 3½"—20 ga. ..... 55c Each
No. 302 8" x 12" x 4"—20 ga. ..... 60c Each

Prices F. O. B. Factory, Philadelphia, Pa.

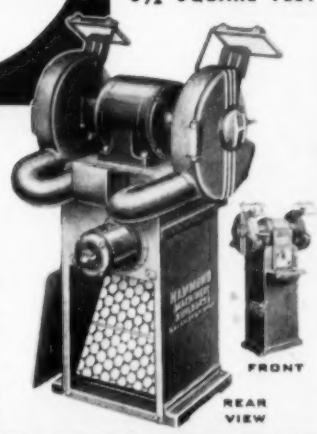
AMERICAN METAL WORKS, INC.
1503 Germantown Ave. Philadelphia, Pa.

▲ Mention Item **NED-6286** when writing ▲

Hammond OF KALAMAZOO NO-DUST GRINDERS

PATENT PENDING

★ **SAVE 50%** ★
FLOOR SPACE
REQUIRES ONLY 6½ SQUARE FEET



COMPLETELY SELF-CONTAINED GRINDER AND DUST COLLECTOR

All-In-One
COMPACT UNIT

3 POPULAR SIZES
FOR 10" 12" 14" WHEELS

WRITE FOR BULLETIN GP-13

Other Hammond Grinders: "4" Combination Chipbreaker and Grinder; 6, 10A. and 20S Carbide Tool Grinders.

Hammond Machinery Builders INC.
★ ★ ★ 1623 DOUGLAS AVENUE ★ ★ ★
KALAMAZOO • MICHIGAN
EASTERN BRANCH 71 W. 23rd STREET, NEW YORK CITY

▲ Mention Item **NED-6287** when writing ▲

Here's a *Fresh* Look at Motor Buying!

Now that WPB has made *new* recommendations on motor buying, here's a handy, new reference that gives you full, new buying data on the favored high-speed, squirrel-cage motor. You get a complete, up-to-date review of standard motor characteristics, construction features, applications, engineering descriptions, prices and dimensions in this handy catalog. Get this valuable aid to wartime motor buying today! It's free! Write Allis-Chalmers for Bulletin B6052-C now.

FREE!

ALLIS-CHALMERS
MILWAUKEE·WISCONSIN

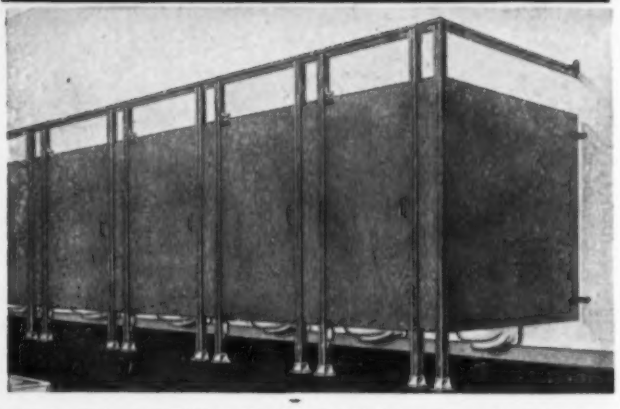
▲ Mention Item NED-6288 when writing ▲

*Sanymetal**

ALL-WOOD TOILET COMPARTMENTS

With Complete Door Hardware and Partition Fittings

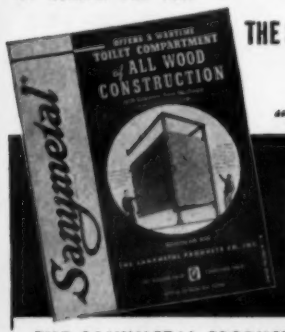
NOW AVAILABLE • READY TO INSTALL



This is no time to risk the health and well-being of employees by setting up makeshift toilet facilities. Where adequate and modern toilet and washroom facilities are available lost time, from cases of minor illnesses, occurs less frequently. Sanymetal All-Wood Toilet Compartments provide conveniences, and a degree of sanitation, that are usually unknown, unappreciated, and overlooked by those who do not have years of specialized experience and skill to draw upon in building toilet compartments. Sanymetal Specialists have 27 years experience. For one thing, this means the elimination of dust-collecting and germ-collecting ledges and pockets. A makeshift toilet compartment may endanger the health of employees. Sanymetal All-Wood Toilet Compartments come to the job ready for immediate installation. On one order you include all the wood partitions and doors, posts and head-rails, and all the hardware and fittings that are necessary to complete the installation. This avoids delays for assembling materials, or for experimental erection.

Bulletin No. 900 gives complete specifications for Sanymetal All-Wood Toilet Compartments. Write for it today, but for quick action look under "Partitions" in your phone book for name of Sanymetal Representative in your locality.

Lockers of plywood or tempered presdboard have been developed by Sanymetal Engineers. Your requirements can be met promptly. Write for Bulletin No. 920. **Trade Mark Reg. U. S. Pat. Off*



THE SANYMETAL PRODUCTS CO., INC.
1719 Urbana Road
CLEVELAND, OHIO
"Throw your Scrap into the Fight!"

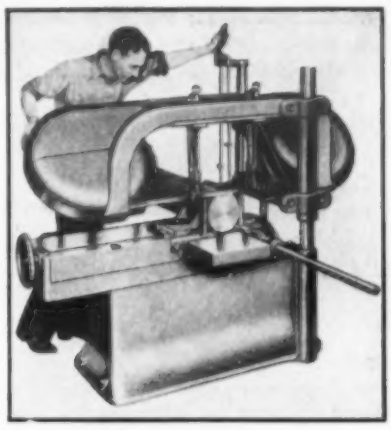
USE THE COUPON TO GET COMPLETE INFORMATION ON SANYMETAL WARTIME TOILET COMPARTMENTS OF ALL-WOOD CONSTRUCTION—THIS CIRCULAR JUST OFF THE PRESS!

THE SANYMETAL PRODUCTS CO., INC.
1719 Urbana Road • Cleveland, Ohio
Please rush by return mail your new Bulletin No. 900 on Sanymetal Wartime All-Wood Toilet Compartments

NAME _____
POSITION _____
FIRM _____
ADDRESS _____
CITY _____ STATE _____

▲ Mention Item NED-6289 when writing ▲

METAL CUTTING BAND SAW



With capacity of 13 by 16 inches rectangular and 13 inches in diameter for rounds, this model V-12 metal cutting band saw offers continuous metal cutting features to larger jobs which could not be handled on low cost band saw. Incorporating features of model No. 5 and No. 12 band saws, this unit also includes hydraulically controlled feed and lift apparatus.

Frame has been redesigned to assure ruggedness necessary for increased capacity. Power is supplied by ¾-horsepower motor which drives blade at choice of 53, 94 or 148 feet per minute. Availability of these three speeds permits metal in almost any shape to be cut.

Hand operated, quick acting vise facilitates handling of material being cut. Combination belt and gear drive is employed. All moving parts operate on ball bearings. Machine measures 52½ inches high and requires 73 by 30-inch floor space. Top of bed measures 24 inches from floor. Made by **Wells Mfg. Corp.**, Seventh Place, Three Rivers, Mich.

▲ Mention Item **NED-6290** when writing ▲

CONDUCTIVE FLOORING

Explosions resulting from static electricity are minimized through introduction of Condurock ready-mixed mastic flooring material which is conductive to electricity. By providing effective ground, flooring material dissapates hazardous electrical charges which may be built up by machinery, belting and material handling equipment in industrial structures. Electrically conductive floors are recommended by Ordnance department safety bulletin No. 25 for factory areas where black powder, igniter compositions, tracer mixtures, primer mixtures, mercury fulminate, lead azide, tetrol and other like materials are handled and processed.

Condurock is said to be spark-proof as well as explosion safe. Tested with wire brushes, hammer blows and emery wheels, it failed to show any inclination towards friction sparks, according to manufacturer. Resistance as low as 700 ohms is offered to flow of current applied to floor through 5-pound electrode in contact with 5 square inches of floor. This test was conducted on actual floor, not entirely free from dirt and under normal operating conditions.

Material is dark red in color. It withstands repeated washings and can be swept, brushed, mopped or scrubbed. Application requires no special labor and it sets quickly. Material can also be used for table tops and work bench surfaces, on aisles, walks, loading platforms, stair treads, ramps and similar traffic areas. It is claimed that material will handle heaviest loads regardless of wheel size. Made by **Rock-Tred Corp.**, Dept. C, 605 W. Washington Blvd., Chicago, Ill.

▲ Mention Item **NED-6291** when writing ▲

WOMEN'S SAFETY CLOTHING

Styled in accordance with accepted dressmaker patterns, this line of tailored protective clothing for women welders is made of selected chrome tanned cowhide. Clothing is light in weight, yet is claimed to afford positive protection against sparks and weld spatter.

Attractively styled, clothing is cut to give free and easy movement to body, but at same time fitting snugly so that there are no gaps or entrances to admit flying sparks. Complete line consists of tailored cap, short jacket, coat, overalls, sleeves and 36-inch apron.

Seams are located away from direct line of fire wherever possible. Welted inseam construction is used throughout for strength and to protect stitching from hot sparks. Tailored cap protects wearer's hair and is shaped similarly to bathing cap with flaps extending over ears. Standard welder's masks or goggles can be used.

Overalls are styled like women's slacks, with side placket to insure trim, comfortable waist line. Flared trousers provide additional protection for feet. Yoked backs of coat and short jacket permit freedom of arm movement. Ample fullness is provided by tucks running from shoulders in front. Made by **American Optical Co.**, 1492 Mechanic St., Southbridge, Mass.

▲ Mention Item **NED-6292** when writing ▲

SPEEDS UP STOCK-ROOM SERVICE

The BROWN SECTIONAL RACK displays each diameter and length of stock in visible array for instant selection and removal, consequently it speeds up Stock-Room service and saves the time wasted by workmen waiting for materials.

The Brown Rack saves the time lost end-hauling each bar its entire length when the old-style, closed-side rack is used: the Brown Rack requiring but a few inches of side movement.

Any time you require additional storage space, all you need do is add more units. If you want to relocate it at any time, you can do so quickly for it is unattached to the building.

It is a simple, durable article made of metal in five styles. It can't burn, warp, sag or twist: depreciation is practically nil. SEND FOR BULLETIN No. 26-D DESCRIBING

—THE BROWN SECTIONAL RACK—

BROWN ENGINEERING CO. 129 N. THIRD ST. READING, PA.

▲ Mention Item NED-6293 when writing ▲

Easily and quickly nailed in place.

Carey **A-D BOARD SAVES STEEL IN RETURN and SUPPLY AIR DUCTS**

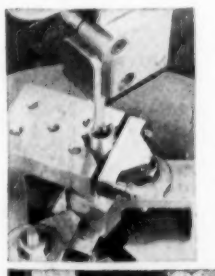
This is a strong, tough and inexpensive laminated board, designed primarily for fabricating return and supply air ducts by nailing across two joist bays. White asbestos, both sides, it is flame-proofed, moisture-resistant. Has superior sound-deadening qualities; will not conduct electricity. Requires no finish but can be readily painted. Carey A-D Board is 33" wide for standard joist spacing of 16". Approximately ⅛" in thickness, it is light in weight, yet surprisingly rigid. Easily cut, sawed or nailed to joists. A center line instantly locates center joist.

Ideal also for joist liners; pan construction; dumb waiter lining; elevator shaft protection; finishing basements, attics, stair wells, spray booths; shop and factory ceilings; reflector panels for indirect lighting, etc.

Write today for sample and full details. Address Dept. 79.

THE PHILIP CAREY MFG. COMPANY
Dependable Products Since 1873. Lockland, CINCINNATI, OHIO
IN CANADA: The Philip Carey Co., Ltd.—Office & Factory: Lennoxville, P.Q.

▲ Mention Item NED-6294 when writing ▲



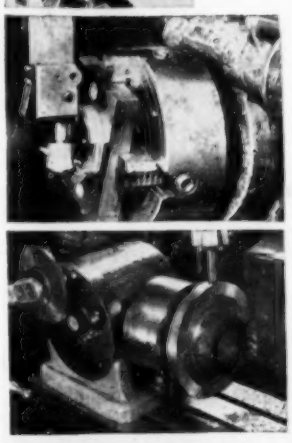
***4 of the many ways* SLOTMASTER *can be used to save* TOOLS & SETUPS**

Left: Set-up for cutting a spline in an adapter

Below: Set-up for cutting an internal gear

SLOTMASTER can be used on any round or flat-on round over-arm milling machine and will do precision work that normally requires a multi-thousand dollar machine (all of the working parts are of tool steel, heat treated). It takes but little time to change over from one head to the other . . . the stroke of the ram is adjustable from 0 to 4" . . . the speeds range from 50 to 250 s.p.m. The tool holder is of the clapper box type and can be turned in any position. . . SLOTMASTER comes complete with pulleys, motor, mounting bracket etc. . . .Send for 4-page catalog—give specifications of the milling machines you wish to equip. *Immediate deliveries on high priorities.*

EXPERIMENTAL TOOL & DIE CO.
12611 Greiner
Detroit, Michigan



Below: Conventional set-up on a round over-arm milling machine—thumbnail shows a set-up for shaping a feed cam.

▲ Mention Item NED-6295 when writing ▲

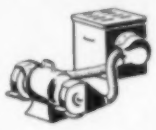
STOP DUST

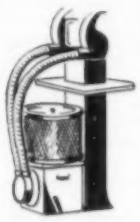
from

Grinders

with

DUSTKOP





- Low Cost (Model 600) DUSTKOP with Oversize Filter exhausts dust from tool, surface, cutter and internal grinders. Compact; saves floor space. Saves heat.
- DUSTKOP is entirely self-contained; operated by continuous duty GE motor, fan and filter. No connecting in with centralized system.
- No tools are required to install DUSTKOP. Long-lived filters are quick and inexpensive to renew.
- Model 1250 DUSTKOP for large wheeled tool, surface and carbide grinders, buffers, polishers has cyclone and filter complete.
- Prompt deliveries of standard units on high priorities.

AGET-DETROIT MFG. CO.
2045 Book Building **Detroit, Michigan**

▲ Mention Item NED-6296 when writing ▲

MECHANIZED SWEEPING

Consistent with modern shop practice, men with brooms are being rapidly replaced with this mechanized method. One MOTO-SWEEPER can do the work that required many men before—releasing them to help speed the wheels of production. And relieving still further the burden of non-productive labor. . . . Efficient, rugged and easy to operate, in large or small areas. . . . Send for catalog . . . three models (two motorized).

Prompt deliveries on high priorities.

THE MOTO-MOWER CO.
Industrial Sweeper Division
4500 Woodward Ave., Detroit, Mich.

MOTO-SWEEPER
A SWEEPING CREW ON WHEELS!

▲ Mention Item NED-6297 when writing ▲

BIGGER THAN IT LOOKS

That's what they say about Eastern husky Midgets—a "handful" of pump that does the job. More and more Eastern Midget Pumps are replacing larger, bulkier equipment with increased efficiency at lower cost.

The Eastern Midget Pump line is probably the most complete there is, and Eastern's experienced engineers know how to fit almost any pumping application.

Get the free Midget Pump Catalog; it contains valuable engineering data.

EASTERN ENGINEERING COMPANY
47 Fox St., New Haven, Conn.

EASTERN HUSKY MIDGET PUMPS

▲ Mention Item NED-6298 when writing ▲

MILLING MACHINE

Designed to accommodate any make of high speed milling head, this heavy duty precision Uni-Mill milling machine can be supplied either with or without detachable head. It may be adapted to many different types of milling operations, thereby releasing power-driven milling equipment for production or more essential work.

Large table, measuring 10 by 42 inches, permits machine to handle up to 30-inch cuts. Stability for heavy precision work is afforded by sturdy construction, machine weighing 2300 pounds which is almost double that of machines of comparable size.

Table movement, transverse operation and elevation are effected manually. Arm is also adjustable and head can be positioned as required for type of milling operation being performed. Made by **Lincoln Machine Specialty Co.**, 549 W. Washington St., Chicago, Ill.

▲ Mention Item NED-6299 when writing ▲

FLUORESCENT FIXTURES

Adhering strictly to policy of conservation of critical steel, eight industrial fixtures with composition reflectors have been added to this line. In addition to having all features of standard line, reflection factor is claimed to be even higher than that of porcelain enameled steel reflectors.

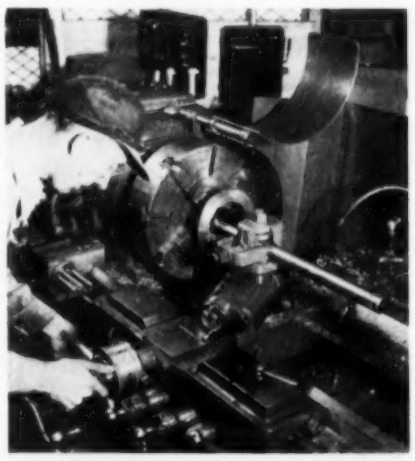
Sizes range from 100 to 300 watts, and styles are available for either individual or continuous - row mounting. Reflectors are finished in Miracoat baked white enamel and outside of unit is finished in French gray. Fixtures are furnished complete with fluorescent lamps and Mirastat starters. They are wired and ready to install and operate.

Slide-Grip hangers are supplied with all continuous-row models and provide for easy installation. Shown are models HF-100P, with two 40-watt lamps, for individual mounting; and HFF-208P, typical four 40-watt unit for continuous-row installations. Similar models are available with 100-watt lamps. Made by **Sylvania Electric Products, Inc.**, Dept. RWS, Ipswich, Mass.

▲ Mention Item NED-6300 when writing ▲

LARGE BORING BARS

Featuring dual clamping arrangement that holds boring bar in holder and holder to machine, these large type boring bars and holders are designed for lathes with swings of from 9 to 36 inches. Holder may be removed from lathe without disturbing alignment of boring bar. In addition to saving time, this design increases accuracy in duplicate operations. Permanent calibrations on bars eliminate need for use of file marks or chalk markings. These calibrations are engraved into each end of bar for some distance back from tool bit holes in ¼-inch steps. This reduces opportunities for errors through use of wrong file mark. Rigidity of bar is retained and chatter is eliminated.

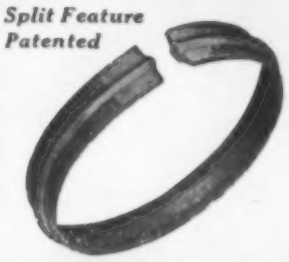


With holder, which has separate clamp for attaching it to lathe compound, it is possible to maintain same tool height and bar stick-out in such duplicate operations as boring, turning and cutting of bushings. Bar need not be removed from holder when it is removed from lathe. Bits are held in position with Allen screws, preventing damage to tools resulting from use of wrenches on cutting edge to remove tool bits. Made by **Clayton Mfg. Co.**, Dept. NED, Alhambra, Calif.

▲ Mention Item NED-6301 when writing ▲

It's IMPORTANT to PROTECT PIPE • use WEDGE PROTECTORS

Split Feature Patented



It is more important now than ever to properly protect pipe or tubing while in transit or in process of manufacturing. WEDGE makes a complete line of closing plugs, pipe protectors, plain end and thread protectors. Write for circular and prices.

Save LABOR MATERIAL and TIME with WEDGE Split CHILL RINGS

Do you weld pipe? If you do, investigate WEDGE Chill Rings with the patented SPLIT Feature. They enable you to weld FASTER and BETTER, and you also get STRONGER joints because you get 100% penetration. Write today for information.

WEDGE PROTECTORS, INC.
9528 RICHMOND AVE. CLEVELAND, OHIO

Use WEDGE Chill Rings-Thread Protectors

▲ Mention Item NED-6302 when writing ▲

Get the Surer Hand Protection of

Stanzoil NEOPRENE GLOVES
. . . and they actually cost you nothing

● One day's lost production from a pair of skilled hands in your plant far more than pays for a pair of Stanzoils—not to count doctor bills and liability claims. It pays you, *and it's important to the war,* to give men and women workers the better protection of Stanzoils of miracle neoprene that resists the attack of oils, acids, caustics, often lasting 3 to 7 times as long as ordinary gloves. Black or white, sizes and weights for all needs. Hundreds of industries now use them. Write for the whole story—and current delivery date.

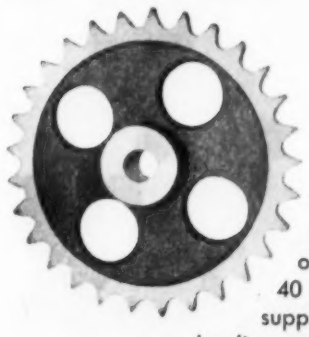
STANZOIL PIONEER

Synthetic Rubber Division
THE PIONEER RUBBER COMPANY
Over 20 Years of Quality Glove Making
248 Tiffin Road, Willard, Ohio, U.S.A.
New York • Los Angeles

MADE WITH DU PONT NEOPRENE

▲ Mention Item NED-6303 when writing ▲

"SPROCKETS BY CULLMAN"



That is an indication of the finest and most accurate construction.

When you specify "Sprockets by Cullman," you have the assurance of quality, backed by over 40 years of experience in supplying sprockets to leading manufacturers.

OVER 50,000 SPROCKETS IN STOCK

CULLMAN WHEEL CO.
1333 Altgeld St., Chicago

▲ Mention Item NED-6304 when writing ▲

Now! THEY'RE MADE OF WOOD

INCREASED PRODUCTION —PROMPT DELIVERY

● Kewaunee Automatic Adjustable Stools and Chairs, formerly made of metal, are now being produced in ALL WOOD. Redesigned to retain substantially the same adjusting principle. Sturdily built of selected hard wood to embody unusual strength and endurance. They're "ton-tested."

Kewaunee AUTOMATIC ADJUSTABLE CHAIRS and STOOLS

A new standard of efficiency in industrial seating. Any man or woman, tall or short, light or heavy, can *instantly* adjust a Kewaunee AA Chair or Stool to exactly the height desired. Just lift the seat—that's all. Right posture, correct height of seat from floor, insure greater comfort and efficiency, better work, increased production, fewer rejects.

Write for circular and full details.

Three standard height ranges—18" to 22", 22" to 28", and 28" to 36". Other heights obtainable. Shaped plywood seat, adjustable back-rest and foot-rest.

KEWAUNEE MFG. CO., ADRIAN, MICH.

▲ Mention Item NED-6305 when writing ▲

FASTER, EASIER CARTON STITCHING WITH ACME Silver Stitchers

". . . we have doubled our production of stitched cartons and this would not have been possible without the use of your equipment and wire."

That's the record the operator in the illustration compiled with an Acme Silverstitcher and Silverstitch stitching wire. Together, they form a triple-threat combination that slashes previous production records and cuts costs at the same time.

Nor are such records as this uncommon. Scores of Acme Silverstitcher users report time and money-saving results. As indicated in the illustration, many concerns are employing women to operate these extremely easy-to-use Acme Silverstitchers . . . as wartime needs call men to other duties.

Acme Silverstitchers are made in standard and special sizes and types . . . to meet every stitching requirement. Together with Acme Silverstitch, they assure better, faster, easier stitching. Write for full details today.

ACME STEEL COMPANY
2822 ARCHER AVENUE, CHICAGO, ILLINOIS
Branches and Sales Offices in Principal Cities

Look for Acme Steel on the Seal

▲ Mention Item NED-6306 when writing ▲

ASK THE MEN WHO HANDLE 'EM!

"I run a Mercer No. 7 and believe you me it's a sweetheart — smoothest tonnage tackler on wheels!"

The MERCER Model 7 CRANE handles loads up to 7 tons... Smaller models available with 3 and 5 ton capacities. All three sizes are compact...fast ...steady...and deliver hard, continuous service at low cost. Gasoline-powered. One man operation. Special new catalog describes and pictures complete line. Write for your copy today!

"THE NAME THAT CARRIES WEIGHT"

MERCER WHEEL • TRACTOR CRANES
LIFT TRUCKS • TRAILER TRUCKS • BATTERY TRUCKS
MANUFACTURED BY
MERCER ENGINEERING WORKS, INC., 30 CHURCH STREET, NEW YORK
Works: Clifton (Allwood), N. J.

▲ Mention Item NED-6307 when writing ▲

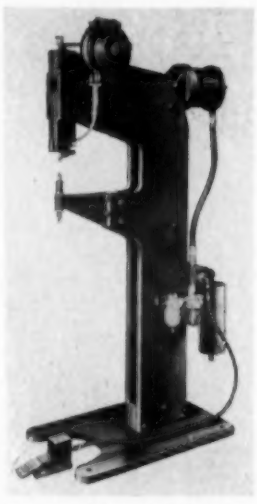
WOODEN SHELVING

Offered as effective replacement for metal shop shelving which can no longer be made, this wooden shelving is designed in accordance with Government specifications. Illustrated is standard unit which is 3 feet wide, 5 feet high and 18 inches deep. It has six shelves, top two being fitted with dividers, one having six compartments and other four sections. This unit is priced at $13.50, unpainted, and $15.95, finished in olive green.

Also available are other sizes and shelf arrangements. Latter can be adapted for user's requirements. Units can be used in multiple for all types of industrial and commercial shelving arrangements. No critical materials are used. Made by **Chas. Utech, Inc.**, 4668 N. Twenty-seventh St., Milwaukee, Wis.

▲ Mention Item NED-6308 when writing ▲

RIVETING MACHINE



Affording speed and efficiency in flush riveting for aircraft production, this Rivitor machine is air powered. It has automatic feed and setting mechanism. Simplified construction permits use of less critical materials and fewer parts than previous designs. Pressure for riveting is furnished by air cylinder. Pressure from cylinder is multiplied through toggle mechanism.

Machine is specifically designed to handle aluminum alloy riveting for aircraft requirements, with capacity for rivets ¼ inch in diameter and ¾ inch long. By using different type of rivet set and rivet jaw construction, machine can be adapted to handle countersunk head, round head, full and semi brazier head rivets. Available throat depths range from 9 to 36 inches.

Upper and lower tools are accurately aligned and vertical adjustment of lower tooling can be accomplished without disturbing this alignment. Common variations in thickness of materials being riveted are accommodated automatically. Major variations necessitate simple manual adjustment of setting tools.

Horn section holding lower tooling may be removed and replaced with horn section from any other RP or RS interchangeable horn type Rivitor. Adherance to standard dimensions makes possible this interchangeability. Made by **Tomkins-Johnson Co.**, 609 N. Mechanic St., Jackson, Mich.

▲ Mention Item NED-6309 when writing ▲

ELECTRICAL INSULATIONS

Developed for electrical insulation purposes formerly served by varnished silk, this line of electrical insulations includes varnished rayon, varnished cotton cloth and varnished Nylon.

These materials possess good dielectric strength, with tensile and tear strengths equal to or better than varnished silk. They can be punched into special shapes. All types are made in thicknesses from 0.003 to 0.008 inch and are supplied in straight cut rolls or bias cut strips in 51-inch lengths. Each base material is coated with special insulating varnish.

High tenacity varnished rayon is most suitable alternate for varnished silk, comparing favorably with it in strength and flexibility. Dielectric strength is 1200 volts per mil and it is used for wrapping leads, small magnetos and coils.

Varnished cotton cloth has higher tensile strength than varnished silk. Pliability permits application to odd shapes. Dielectric strength is 1200 volts per mil.

Varnished nylon has qualities of flexibility and high tensile strength, with dielectric strength of 1200 volts per mil. Nylon, at present time, is available only by Government allocation. Made by **Irvington Varnish & Insulator Co.**, 24 Argyle Terrace, Irvington, N. J.

▲ Mention Item NED-6310 when writing ▲

Here is a Portable COOLANT SYSTEM with LARGE VOLUME, FULLY CONTROLLED FLOW

The New Gray-Mills HI-VOLUME Centrifugal Pump

NOW you can have large coolant-volume and high flushing capacity in a *Portable Coolant System*. Wherever you want the advantages of using coolants you can have them—on *all* your equipment—for *all* metal working operations like: grinding, honing, milling, cutting, tapping and threading.

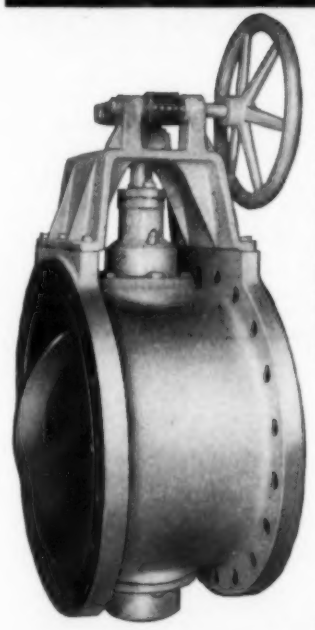
The new Gray-Mills Hi-Volume Centrifugal pump, scientifically designed, specifically to handle coolants, will easily deliver 1,000 gal. per hour, or a controlled flow of any volume down to 10 gal. per hour. Here are some other important features:—A relief valve eliminates pressure build-up—The tank is fitted with baffle plates for forced settling of abrasives and chips, to keep the coolant clean—Rugged, simple construction assures long trouble-free service—Horse power consumption is low because efficiency is high. Write for complete details.

GRAY-MILLS
Complete Portable Coolant Systems Flo-Bac Coolants, Pans and Fittings

GRAY-MILLS CO., 225 W. Ontario St., Chicago, Ill.

▲ Mention Item NED-6311 when writing ▲

Simplified Shut-Off



Rugged, precision-machined construction for high temperatures and pressures to 600 pounds. *Six hand wheel revolutions complete full vane movement.* Seats wedge-tight for the simplified shutoff of any material that flows or is forced through a pipe. Write for new Catalog No. 14-B.

BUTTERFLY VALVE DIVISION
R-S PRODUCTS CORPORATION
4527 Germantown Ave., Philadelphia, Pa.

R-S Streamlined BUTTERFLY VALVES

▲ Mention Item NED-6312 when writing ▲

--use Cortland Emery Aggregate Flooring

SAFER . . because it is absolutely non-skid, even when wet, and gives better traction. LONGER WEARING . . because it is harder and stronger by actual tests. LOWER UPKEEP . . because it does not crack, dusts less and requires no "floor hardeners". MORE ECONOMICAL . because it is a natural mined product that is so easy to lay.

CORTLAND EMERY AGGREGATE is scientifically sized emery, long known for its hardness and strength. It is laid with cement and water, two other natural products, by anyone who can handle concrete. It is a natural metallic floor hardener and requires no supplemental or additional hardening treatment. It does not deteriorate so can be stored until needed for additional floors or quick repairs.

Send for Illustrated Bulletin

Learn how **CORTLAND EMERY AGGREGATE** is meeting present-day rushed industrial needs for new flooring, resurfacing floors and repairing floors. Study the scientific reasons for the deep surface, integrally bound with the concrete base, instead of a mere coating or veneer. *There are, as yet, no priorities on CORTLAND EMERY AGGREGATE so investigate at once.*

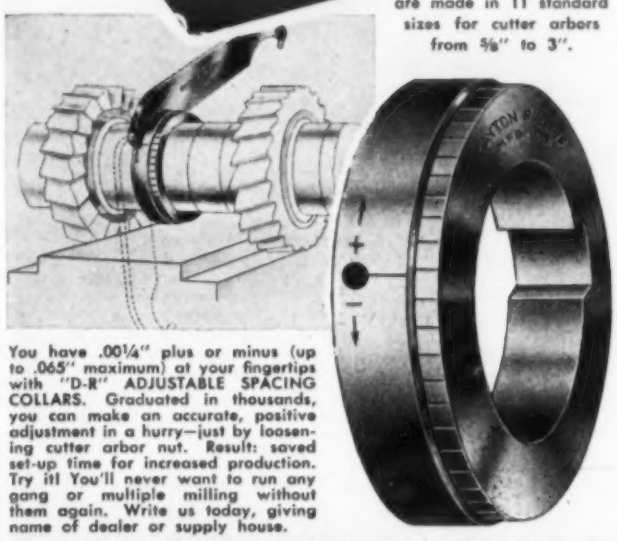
WALTER MAGUIRE CO., Inc.
330 West 42nd St. • New York, N. Y.

▲ Mention Item NED-6313 when writing ▲

FAST, ACCURATE SPACING

for SIDE MILLING CUTTERS GANG MILLING SET-UPS

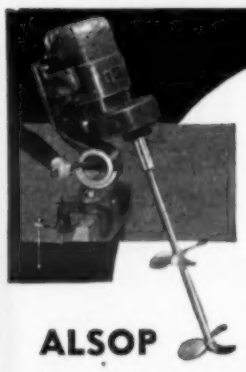
"D-R" ADJUSTABLE SPACING COLLARS are made in 11 standard sizes for cutter arbors from 5/8" to 3".



You have .001¼" plus or minus (up to .065" maximum) at your fingertips with "D-R" ADJUSTABLE SPACING COLLARS. Graduated in thousands, you can make an accurate, positive adjustment in a hurry—just by loosening cutter arbor nut. Result: saved set-up time for increased production. Try it! You'll never want to run any gang or multiple milling without them again. Write us today, giving name of dealer or supply house.

DAYTON ROGERS MFG. CO. 2837 12th Ave. So., Minneapolis, Minn.

▲ Mention Item NED-6314 when writing ▲



PERFECT MIXING of your Products is our Job.

To provide you with the right Mixer to give you perfect Mixing is also our job.

ALSOP HY-SPEED MIXERS

With any Mixer recommended by us there will be no guesswork about the results you get.

WHY IS THIS SO?—During the past twenty years we have solved thousands of Mixing problems, and this experience is built into our Mixers and Agitators.

If you have a problem of mixing or agitating liquids, don't hesitate to ask us about it.

We shall be glad to help and without obligation.

If we recommend a mixer or agitator for any liquid processing job you have, we guarantee the results.

ALSOP ENGINEERING CORP.
18 Main St. Milldale, Conn.

ALSOP MIXERS

▲ Mention Item NED-6315 when writing ▲

To Serve Under Your Machines and In Your Products FELTERS FELT

In hundreds of plants, Felters Unisorb Cushion Mountings are used *under* machines to hold them firmly to the floor. Equipment can be moved in and quickly located in the production line without the need for bolts or lag screws.

Felters Felts for Products

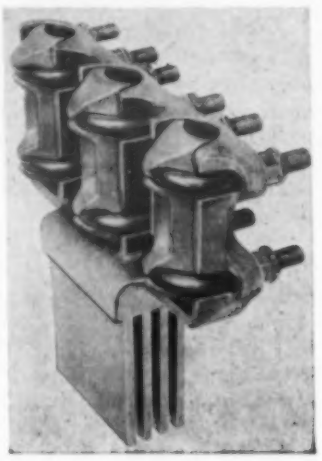
Other kinds of Felters Felt pads, parts, strips, linings, packing, wicks, and seals are used in a widely diversified number of *products* . . . in many places, Felters Felt is replacing rubber and cork.

Write today for the Felters Catalog that gives complete information about qualities, characteristics, and specifications of the many grades of Felters Felt.

THE Felters Company, INC.
Offices in Principal Cities
210-1 South Street, Boston, Massachusetts

▲ Mention Item NED-6316 when writing ▲

CABLE FITTINGS



Increased use of multiple cables for conductors instead of other forms of copper bars or shapes normally employed has brought about the development of this line of solderless fittings for multiple cables. Included in this line are tees, straight connectors, lugs and strain clamps. Use of these products is claimed to conserve materials essential to war materiel and also to reduce costs.

Illustrated is heavy duty compression type solderless lug which is designed for use with three 1,000,000 circular mill cables and for connecting to flat bar type equipment terminal. Made by **Delta-Star Electric Co.**, 2402 Fulton St., Chicago, Ill.

▲ Mention Item NED-6317 when writing ▲

SHOP STOOLS AND CHAIRS

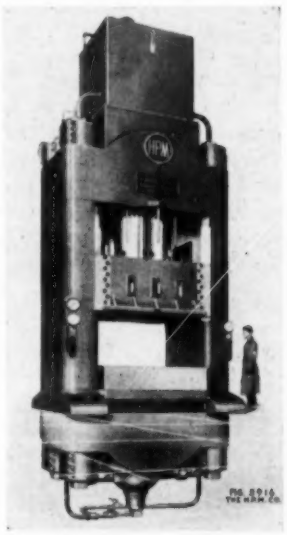
Adjustment of height of seat in this line of automatic stools and chairs for industrial use is effected easily without use of tools or special locking devices. Lifting of seat permits raising or lowering it to desired working height for user's comfort.

Construction features use of wood throughout because of restrictions on steel. Units are adapted for all types of bench, desk, table or machine work. Used in plants employing three shifts, they permit each shift operator to secure correct seating height for comfort and efficiency. Units are particularly useful for operators of punch or drill presses and other machines where operator sits down, as well as for bench assembly and by women inspectors.

Three available adjustment ranges are 18 to 22 inches, 22 to 28 inches and 28 to 36 inches. Automatic locking device holds seat securely at any elevation within range. To raise seat, merely lift it upward. When lifting pressure is released, seat locks automatically at that height. To lower seat, lift it upward to highest possible elevation and then allow it to drop all the way down. Adjustment is possible only on upward movement. Made by **Kewaunee Mfg. Co.**, Industrial Seating Div., 5007 S. Center St., Adrian, Mich.

▲ Mention Item NED-6318 when writing ▲

DEEP DRAWING PRESS



Embodying 3500-ton pressure, downward acting die platen and 1000-ton hydraulic die cushion in press bed, this Fastraverse press is hydraulically actuated and is claimed to be one of the largest self-contained deep metal drawing presses built. It has 84 by 96-inch pressure surfaces and 65 x 65-inch die cushion. Ram travel is 36 inches, with 72 inches of daylight between slide and bolster.

Ram speeds are 355 inches per minute on closing, 53 inches per minute when pressing to 1000 tons and 15 inches per minute when pressing from 1000 to 3500 tons. Power is furnished by 200 horsepower motor.

Frame consists of cast steel head and bed, spaced by pair of cast uprights. Two preloaded tie rods pass through each upright to lock assembly together. Press is capable of deep drawing heavy steel plate to depth of 18 inches. Machine may be operated on varied lengths of stroke and at full pressure capacity for any distance. With die cushion idle, press can be used for single action pressing such as coining, sizing and straightening.

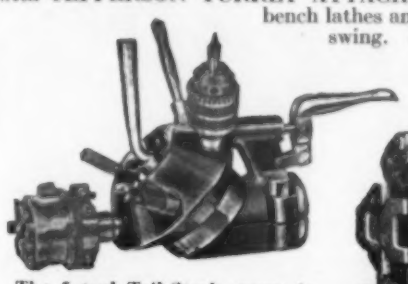
Single Hydro-Power radial hydraulic pump supplies pressure for operation. High and low pressure ranges can be applied in sequence or independently. This operation permits use of machine for forming variety of large and small parts. Closed circuit operating system provides accurate control of all press movements without use of operating valve. Control may be effected manually, semi-automatically or fully automaticly.

Provision is made for prefilling and exhaust of main cylinder during rapid traverse ram movements through valve built into head. Made by **The Hydraulic Press Mfg. Co.**, 100 Marion St., Mount Gilead, O.

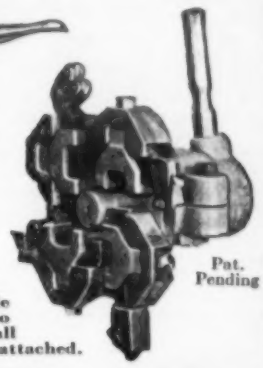
▲ Mention Item NED-6319 when writing ▲

DON'T WAIT FOR TURRET LATHES

Convert any engine lathe into a turret lathe in 15 seconds, with JEFFERSON TURRET ATTACHMENTS. To fit bench lathes and lathes up to 24" swing. *Delivery 6 days.*

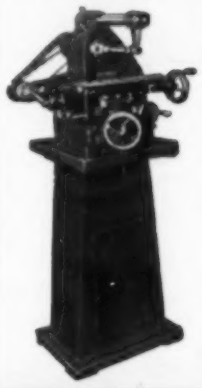


The 5 tool Tail-Stock turret is made in 4 sizes.



The 4 tool Tool-Post turret is made in 2 sizes. Also adjustable Pull Feed. Easily attached.

Pat. Pending



JEFFERSON PRECISION MILLING MACHINE

Motor-driven—capable of close tolerances. Hand and power feed. Floor or bench type. 4 spindle speeds, 200, 400, 700, 1,000 R.P.M.

V Belt Drive. Write for further details.

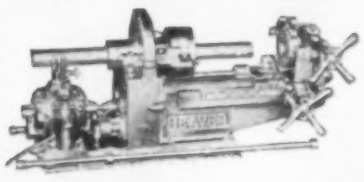
Also—Milling Machine Dividing Heads, Vises, Belt Sanders, Swing Frame Grinders, Gyratory Foundry Riddles.

JEFFERSON MACHINE TOOL CO.
669-679 W 4th STREET DEPT. J CINCINNATI, OHIO

▲ Mention Item NED-6320 when writing ▲

▲ Mention Item NED-6321 when writing ▲

The A-B-C of Pipe and Bolt Machines!

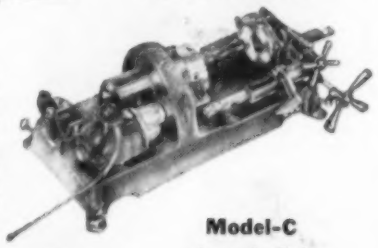


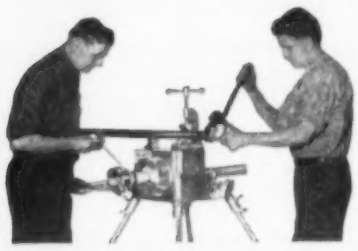
Model-A

A high-speed heavy-duty deluxe Pipe and Bolt Machine. Range ⅛ to 2-inch—up to 12-inch with geared tools and drive shaft. Bolts, ¼ to 2-inch. Wt. 415 lbs. Ask for Bulletin-A.

Model-B

A compact utility Pipe and Bolt Machine combining many features of Model-A with the easy portability of Model-C. Range ⅛ to 2-inch—up to 8-inch with drive shaft and geared tools. Bolts up to 1½-inch. Weight 280 lbs. Ask for Bulletin-B.





Model-C

A sturdy little Power Unit

Converts Hand Pipe Tools into Power Tools from ⅛ to 8-inches. Threads 8-inch in 6 minutes. Threads bolts up to 1½-inch. Equipped with automatic chuck wrench ejector—a safety feature. Two men can use it at the same time without interference. Easily portable—weighs about 150 lbs. Write for Bulletin-C.

BEAVER PIPE TOOLS

1242 HENRY AVE. WARREN, OHIO

▲ Mention Item NED-6322 when writing ▲

The GROVE Pneumatic Gauge COMPARATOR

GROVE SIMPLICITY ACCURACY SAFETY

The Portable Method of Checking All Types Of Pressure Gauges

- Compact, portable and fully self-contained.
- Built-in high capacity rechargeable air cylinders.
- Precision laboratory test gauges accurate to within ¼ of 1% full scale.
- Completely equipped with tubing, connections and accessories.

Figure the amount of time, trouble and money you save when you check your pressure gauges "in-place" without removing them from their panels or mountings; without disturbing existing line connections. The portable Grove Pneumatic Gauge Comparator gives you this fast accurate means of accurately checking any service gauge in service. Write today for Bulletin 300.

GROVE REGULATOR COMPANY
1196 67th Street, Oakland, California
Branch Offices:
5644 Navigation Blvd., Houston, Texas—30 Rockefeller Plaza, New York City

GROVE Pneumatic Gauge COMPARATOR

▲ Mention Item NED-6323 when writing ▲

G-E PLASTICS

HEAVY DUTY APPLICATION IN MACHINE TOOLS

When a tough, long-wearing material was needed for reversible clutch cones for high speed machine tool controls, G-E laminated Textolite was selected for its outstanding physical properties. For exceptional service under severe operating conditions specify Textolite. Consult our engineering service, or write Sec. J-12.

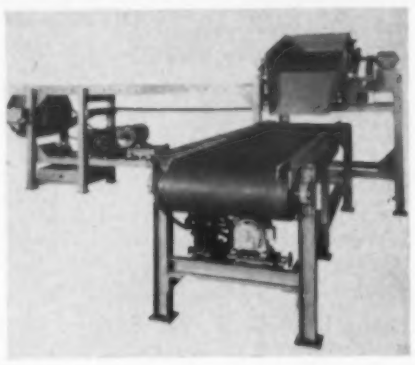
ONE PLASTICS AVENUE
Pittsfield, Mass.

PD-47

PLASTICS DEPARTMENT
GENERAL ELECTRIC

▲ Mention Item NED-6324 when writing ▲

MAGNETIC SCRAP SEPARATOR



Used for screening, magnetically separating and manually sorting ferrous and non-ferrous scrap material, this magnetic separator is made in various sizes and styles to suit conditions of application. Material to be separated, consisting of miscellaneous scrap, is fed onto mechanical reciprocating shaking screen. Size of openings in screen are determined by nature of material to be handled, and screen openings can be changed as desired.

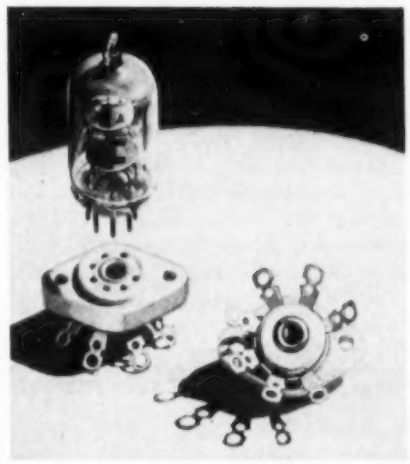
Larger pieces pass over screen and onto short conveyor belt. Material is hand picked for removing alloys and other non-magnetic materials. Balance of scrap which has not been removed manually passes over magnetic pulley which is installed as head pulley of this short conveyor. This separates magnetic particles from non-magnetic material.

Smaller pieces pass through openings in screen and are dropped onto belt of longer conveyor. This material is hand sorted for separating scrap into various components and balance which has been removed passes over magnetic pulley which is installed as head pulley of this conveyor belt. Magnetic portion is carried around to underside of pulley before being discharged. Non-magnetic material passes over brow of pulley in customary manner.

By separating larger pieces from fines, cleaner sorting of scrap can be obtained. Magnetic separation is more effective when handling sized material, resulting in cleaner separation of both coarse and fine products. Made by **Magnetic Engineering & Mfg. Co.**, 700 Van Houlten Ave., Clifton, N. J.

▲ Mention Item NED-6325 when writing ▲

MINIATURE TUBE SOCKETS

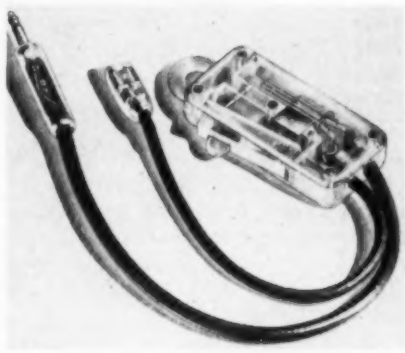


Designed for use with 9000 series and miniature series tubes including RCA 1S4, 1S5, 1T4 and 1R5, this No. 267 Viking miniature socket features grade G steatite insulation. Contacts are of phosphor bronze heavily silver plated and self-aligning so that they receive tiny tube prongs without danger of fracturing glass base of tube.

Other features include orientation of contacts for minimum capacity effect and center shield for grounding to chassis. Steatite insulation is glazed top and sides, with bottom wax impregnated. It is also stated that this socket has been approved by Navy department, Bureau of Ships, being assigned Navy type designation CEJ-49401. Made by the **E. F. Johnson Co.**, Dept. R, Waseca, Minn.

▲ Mention Item NED-6326 when writing ▲

MICROPHONE SWITCH



Intended for use as connecting link between air and ground communications, this SW-141 Phone-Switch is double circuit microphone switch. It is designed for use by operator wearing heavy mittens and is so constructed as to permit easy on and off switching. It remains in open position normally, but can be locked in closed position as required.

Device measures 4-15/32 inches in length by ¾-inch thick by 1¾-inch wide. Case is constructed of high impact strength Tenite II. Switch is mounted on sturdy brass brackets and has blades made of phosphor bronze. Parts are nickel plated and Bakelite insulation is used. Cordage clamps for taking up cable strain are integral parts of housing.

Because of its infallible performance, unit is adapted for use primarily by aircraft radio operators. Made by **American Radio Hardware Co.**, 476 Broadway, New York City.

▲ Mention Item NED-6327 when writing ▲

ALL-PURPOSE MOTORS
TOTALLY-ENCLOSED MOTORS
EXPLOSION-PROOF MOTORS
FLANGED TYPE MOTORS
GEARHEAD MOTORS
SPECIAL TYPES BUILT TO SPECIFICATIONS
BUILT-IN MOTORS
LIMA GEARSHIFT DRIVES

LIMA *"Built-In"* Motors may be just what you too want and need. Why not investigate LIMA *"Built-In"* motors immediately? They are built to your specifications by engineers and workmen who have had years of experience in the field of standard and special electric motor application. LIMA *"Built-In's"* are the answer to your problem of securing quality motors, which become an integral part of your own product.

LIMA also manufactures a complete line of standard electric motors, as well as many special types for applications not covered by the standard line. Consult our engineers today regarding your motor requirements.

LIMA Electric Motors supply todays exacting demand for motors with *stability* and *endurance*. Write or wire us today. Prompt attention to inquiries . . . PROMPT DELIVERY on orders.

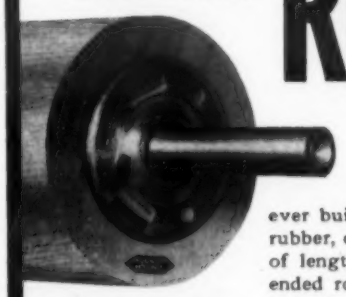
Large enough to successfully serve you, yet small enough to give personal attention to your needs.

THE LIMA ELECTRIC MOTOR CO.
OFFICES - NEW YORK - CHICAGO - DETROIT
LIMA, O. U. S. A.

▲ Mention Item NED-6328 when writing ▲

SUPER-STRONG ROLLS

WOOD - METAL
RUBBER - PLASTIC



Exclusive patented features make Rodney Hunt Rolls the strongest and lowest cost rolls ever built. Made of wood, metal, rubber, or plastic in a wide range of lengths and diameters. Have ended roll troubles and cut roll costs in hundreds of plants.

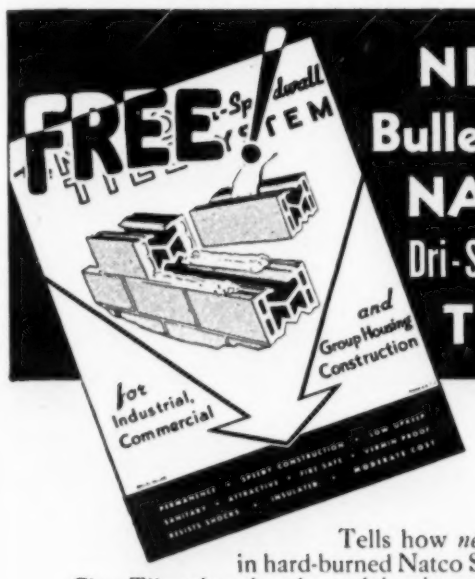
No. 251
Patented "SHAF-TITE" Roll

Write for Catalog

Our new Roll Catalog No. 740 illustrates and describes a wide range of wood, metal and rubber rolls. Also wood and stainless steel reels, showing many patented features.

RODNEY HUNT MACHINE COMPANY
73 Maple Street Orange, Mass., U.S.A.

▲ Mention Item NED-6329 when writing ▲



NEW Bulletin on NATCO Dri-Speedwall TILE

Write For Your Copy

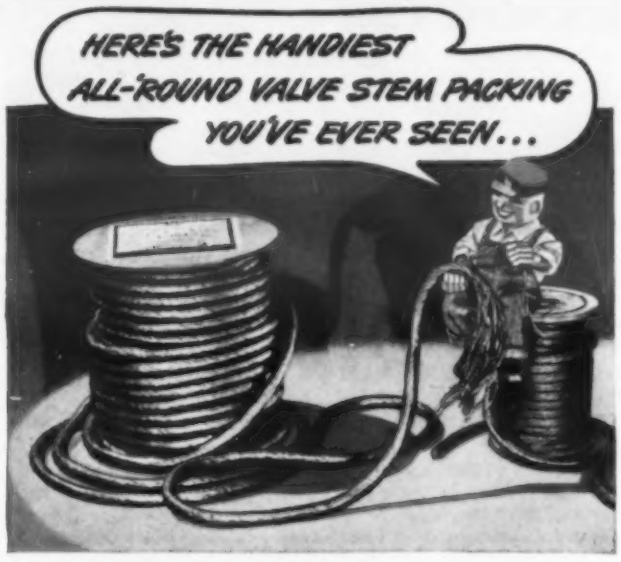
Tells how *new design* in hard-burned Natco Structural Clay Tile takes the place of *hard-to-get critical materials* in dry, leak-proof, insulated, fire-safe, walls in low cost, speedily erected, industrial and commercial buildings of all kinds.

Completed buildings in non-fading Manganese Spot, Buff Unglazed or Salt Glazed finishes require no painting or repairs.

Write for the Natco Dri-Speedwall Bulletin Today.

NATIONAL FIREPROOFING CORP.
214 E. OHIO ST., N. S. PITTSBURGH, PA.

▲ Mention Item NED-6330 when writing ▲



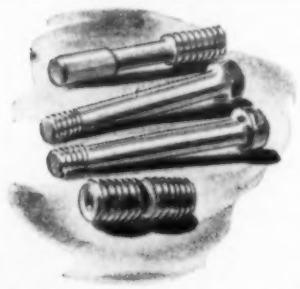
. . . J-M Mogul—the standard valve stem packing for plant operators all over the country

• Unusually adaptable, Mogul may be used as a general utility packing for a wide variety of services. Soft and pliable to begin with, it stays that way on the job—does not wilt under the sustained heat of stuffing boxes. Furnished in twisted style and braided, both round and square. For details, write for the new J-M Packing Catalog. Johns-Manville, 22 East 40th Street, N.Y.

JM JOHNS-MANVILLE PACKINGS & GASKETS
THERE'S A DISTRIBUTOR NEAR YOU

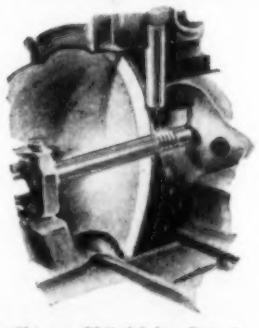
▲ Mention Item NED-6331 when writing ▲

TAKING A LOAD OFF A PILOT'S MIND!



1 These bolts and studs are among the vital parts that hold a plane engine together in the air. Thanks to thread grinding, pilots no longer need worry about them failing. With special grinding wheels the threads are ground to almost unbelievable accuracy, free from microscopic checks and cracks that might later develop fractures.

2 The vast expansion of the aircraft industry, has served to highlight once again the many ways in which grinding serves all industry. At Carborundum we are doing our utmost to make grinding serve you better than ever. And we ask you to remember that every grinding wheel is a "Weapon for Production" . . . use it wisely!



CARBORUNDUM
ABRASIVE PRODUCTS

Sales Offices and Warehouses in New York, Chicago, Philadelphia, Detroit, Cleveland, Boston, Pittsburgh, Cincinnati, Grand Rapids
(Carborundum is a registered trade-mark of and indicates manufacture by The Carborundum Company)

THE CARBORUNDUM COMPANY, NIAGARA FALLS, N. Y.

▲ Mention Item NED-6332 when writing ▲

HELP YOURSELF!

It was *"too little and too late"* in Burma.

Then, those who had been asking for such things as Stainless Steel shaped wire began, *in earnest,* to look for substitutes—and to do an engineering job to end the need for *special* shapes.

It became good *American* business to give the armed forces *first* call.

That has been PAGE policy from the beginning. However, with reservations due to this complete cooperation with the Spirit of Victory production, count on PAGE for whatever we *can* do. Even if we may not be able to supply you at an early date, we will do what we can.

PAGE STEEL AND WIRE DIVISION
Monessen, Pa., Atlanta, Chicago, New York, Pittsburgh, San Francisco

In Business for Your Safety

AMERICAN CHAIN & CABLE COMPANY, Inc.
BRIDGEPORT • CONNECTICUT

▲ Mention Item NED-6333 when writing ▲

SMALL WIRE TERMINAL

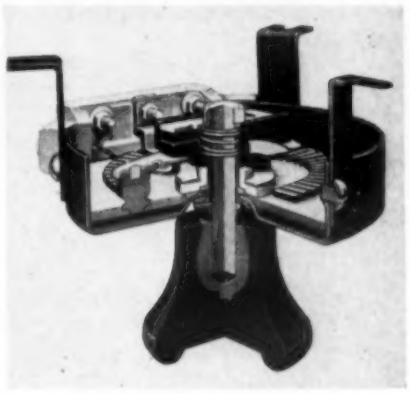
Exceptionally compact and light in weight, this Hylug small wire terminal is available for standard, aircraft and Navy cable. Three sizes accommodate from No. 22 through No. 10 wire. Many variations in design are available, including sighthole for inspection, closed back for moisture-proof sealing, with or without insulation shroud, and in different tongue shapes and dimensions.

Installation is accomplished easily and rapidly through use of Hytool specially designed pliers, or by pneumatic Hypresses. Either tool indents lug on cable to proper depth, resulting in secure and efficient connection.

Insulating sleeves of Versiflex tubing, thermoplastic material, are available. Elasticity of this material is claimed to simplify assembly. High dielectric strength assures safe insulation. Tubing or sleeves can be marked as desired for identifying purposes. Illustrations shows terminal with marked insulating sleeve, at right, and uninsulated terminal, at left. Made by **Burndy Engineering Co.,** 107 Eastern Blvd., New York City.

▲ Mention Item NED-6334 when writing ▲

SMALL POWER RHEOSTAT



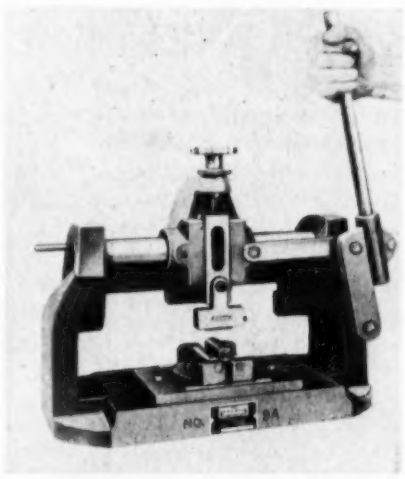
Having large number of steps and ample current carrying capacity, this Bulletin 69 pressed steel rheostat is designed for applications requiring small, sturdy, power unit. These controls are 4 inches in diameter, with 11 or 43 steps of control. Standard rating is 100 watts.

In addition to features of balanced contact arm, "dead" steel shaft construction and multiple mountings, rheostats have copper-graphite contact shoe and solid rectangular contacts which are ground to assure accurate fit, affording smooth operation. Vitreous enameled steel base holds resistive element, latter being completely protected by fused-on coating of vitreous enamel.

Spacing through air and creepage distances between parts of opposite polarity, and between current carrying and grounded parts meet requirements of A.I.E.E., NEMA and Underwriters' Laboratories for 300-volt service. Assemblies can be arranged for front or back-of-board mounting. Available resistance ranges are: 0.5 to 600 ohms, 601 to 800 ohms, 801 to 1500 ohms, and 1501 to 1800 ohms, latter two being supplied only in equal ohms per step. Made by **Ward Leonard Electric Co.,** 51 South St., Mount Vernon, N. Y.

▲ Mention Item NED-6335 when writing ▲

PARTS MARKING MACHINE



Adjustments and other time consuming motions are eliminated in this model 9A parts marking machine to permit untrained operators to make perfect markings on shell, shot, tubular products, and cylindrical parts and pieces. Wide variety of accessories is available for either hand operated or motor driven machines.

For intermittent marking or controlled spacing, geared mandrel and straight line holder assembly are used. Rotary holder with type or roller die may be employed for marking flat parts. Serial numbering is accomplished through use of automatic numbering head. Repeat numbering is possible by single adjustment.

Single pull of operating lever impresses uniform mark of any desired depth on part. Another piece is marked on return stroke. Motorized unit can be operated at any set speed to coordinate with feeding ability of operator.

Construction details include grey iron castings for base and head, cold drawn steel shaft and bearing bar, tool steel head gibs and slide, with all bearings surfaces being cast iron against steel. Made by **The Acromark Corp.,** 7-11 Morrell St., Elizabeth, N. J.

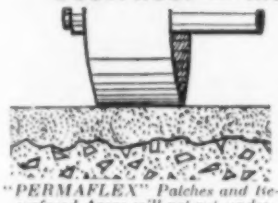
▲ Mention Item NED-6336 when writing ▲

Use "PERMAFLEX" Resurface and Patch INDUSTRIAL FLOORS

Bonds Perfectly—Never Comes Loose

No Chipping Required—Install directly over your old concrete, wood, brick or stone floors, walks or drives. Interior or Exterior.

WEARPROOF — SLIPPROOF — RESTFUL
DUSTPROOF — WATERPROOF — QUIET



"PERMAFLEX" Patches and Resurfaced Areas will not rut under 3000 lbs. per square inch.

OLD MASTICS RUT and DENT under 200 lbs. per square inch.

Many users apply "Permaflex" over new concrete to prevent wearing away of the concrete under truck wheels and thus preserve structural strength.

The most severe trucking conditions in 400 of the largest industrial plants show no destructive effect on "Permaflex" after years of use.

Every conceivable trucking condition was fully met.

AMAZING! UNBELIEVABLE!
***Until you try* "PERMAFLEX"**

Users include U. S. Steel, Bethlehem, Republic, General Motors, A. O. Smith, Western Electric and leading Railroads.

TEST 100 SQ. FT.—BE CONVINCED
Send for literature and trial offer.

INSTALL COMPLETE 12½c per square foot

PERMAFLEX PRODUCTS COMPANY
1848 North Front Street, Philadelphia, Pa.

▲ Mention Item NED-6337 when writing ▲

YOU CAN'T AFFORD OIL DERMATITIS NOW

... Wescol-ize Your Cutting Oil!

Write for copy of this folder

You need healthy man power now—and an absence of compensation claims at all times.

WESCOL*

is a special disinfectant of high power which mixes with and helps keep cutting oil free of harmful pathogenic organisms. Oil thus rendered non-infectious still retains 100% of its cutting-cooling efficiency. You merely attack the hazard of oil dermatitis in a simple manner—and at low cost.

*Trade Mark Reg. U. S. Pat. Office

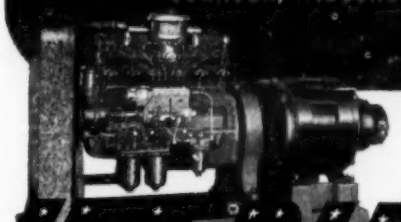
WEST DISINFECTING COMPANY
Dept. DE, 42-16 West St., Long Island City, New York

▲ Mention Item NED-6338 when writing ▲

U.S. DEPENDABILITY

U. S. DEPENDABILITY, in peacetime, means user satisfaction, convenience, low cost service. Today U. S. DEPENDABILITY means life or death . . . . battles won or lost. *Electricity is the nerve center of modern warfare.*

UNITED STATES MOTORS CORP.
OSHKOSH, WISCONSIN



Two, four and six cylinder models—5 KW to 94 KVA

U.S. DIESEL
ELECTRIC PLANTS

▲ Mention Item NED-6339 when writing ▲

NOW

CHANGE BULLETINS QUICKLY-EASILY!

WITH THE NEW M.S.A. TELL•BOARD BULLETIN DISPLAY CABINET

To make your wartime safety messages, morale posters, instruction and special notices really effective, display them in the new M.S.A. TELL-BOARD! Modern in design, this attractive cabinet is sturdily constructed of non-critical materials, provides novel illumination of glass front and trouble-proof hardware! WRITE FOR DESCRIPTIVE BULLETIN No. CD-10.

MINE SAFETY APPLIANCES COMPANY
Braddock, Thomas and Meade Streets, Pittsburgh, Pa.
District Representatives in Principal Cities

▲ Mention Item NED-6340 when writing ▲

Save Time and Money with

HALLOWELL

SHOP EQUIPMENT

You are sure to find the work-bench with just the features you want in the 1367 ready-made "Hallowell" Work-Bench Combinations. "Hallowell" Work-Benches are quickly set up, stand firm and rigid without bolting to floor; can be easily moved, if desired. Five leg heights and widths. Tops of laminated wood, Masonite, or, if advantageous, of steel. Deliveries are better than average.

Fig. 928 Drawer is extra Pat'd. & Pat's. Pend.

Write for Catalog and Complete Details

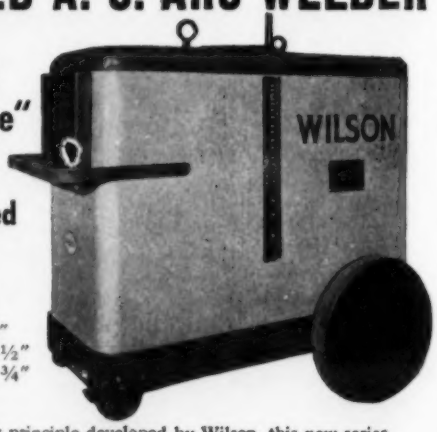
STANDARD PRESSED STEEL CO.
JENKINTOWN, PENNA. BOX 581
—BRANCHES—
BOSTON • DETROIT • INDIANAPOLIS • CHICAGO • ST. LOUIS • SAN FRANCISCO

▲ Mention Item NED-6341 when writing ▲

NOW!

IMPROVED A. C. ARC WELDER

The Wilson "Bumble Bee" for greater welding speed



500 Amp. Dimensions
Length . . . 39"
Height . . . 38½"
Width . . . 24¾"

Utilizing a new principle developed by Wilson, this new series of A.C. Arc Welding machines has the following advantages:
1. Low open circuit of 42 volts.
2. Current range meets amply NEMA range and rating.
3. Power factor correction with built-in capacitors at no extra cost. This results in a power factor ranging from unity to 86% lagging over the popular working range.
4. Electrical efficiency 80% to 82% over working range.
5. Simplicity of control. Infinite steps of adjustment throughout NEMA range with only one hand wheel control.

Available in 300, 500, 750 and 1000 ampere capacities. Write for bulletin ADW-49.

AIR REDUCTION
General Offices: 60 East 42nd St., New York, N. Y.
In Texas: Magnolia—Airco Gas Products Co.
DISTRICT OFFICES IN PRINCIPAL CITIES

▲ Mention Item NED-6342 when writing ▲

SOLDERLESS FLAG TERMINAL

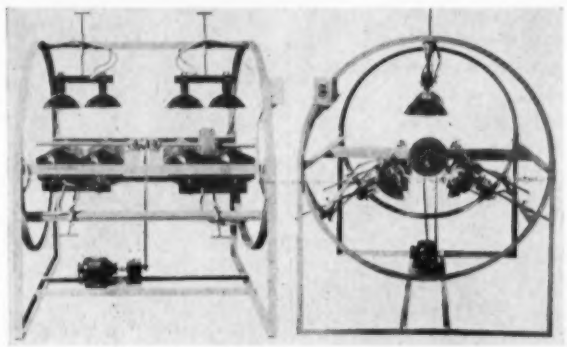
Permitting stacking of series of parallel terminal connections on single stud block without loss of space or electrical conductivity, this solderless flag type terminal features tongue which is sufficiently flexible to permit multiple stacking after wiring. Terminals may be used for either left or right hand application, because terminal barrel is symetrically located with respect to plane of tongue. This design simplifies installation and permits increased production by eliminating necessity of distinguishing between and stacking two different terminals.

Units are available for wire sizes ranging from No. 22 to No. 10. Terminals are of pure copper for maximum conductivity. They are hot electro-tinned to assure resistance to corrosion. No solder is necessary in assembling units. They are crimped on wire with hand, power or foot operated tools and are readily installed. Special designs are available to meet requirements of other than standard applications. Made by **Aircraft-Marine Products, Inc.**, Dept. K, 286 N. Broad St., Elizabeth, N. J.

▲ Mention Item NED-6343 when writing ▲

POLISHING WHEEL DRYER

Through use of this portable infra-red ray machine, polishing wheels are dried within 30 minutes after application of "head", as compared with 24 hours normally required for



drying in ovens. Unit is claimed to make possible removing of wheels from production, reheading and replacing in service within 40 minutes. Wheel inventory may be reduced and same wheels may be used more than once during each working day.

Equipment consists of twelve 240-watt gold plated infra-red reflector lamps supported around shaft which holds polishing wheels. This shaft is rotated by 1/6-horsepower motor through reduction drive which has 60 to 1 ratio to give approximately 12 revolutions per minute to shaft. Other speeds may be obtained by adjustment of drive.

Wheels are rotated under three lamps and various sizes of wheels can be mounted on shaft at one time by use of bushings. Even drying is assured by uniform rotation and heat application. Equipment which is 54 inches square and 66 inches high is mounted on casters for portability. List price is $295. Made by **Park Chemical Co.**, 8074 Military Ave., Detroit, Mich.

▲ Mention Item NED-6344 when writing ▲

LARGE HYDRAULIC PRESS

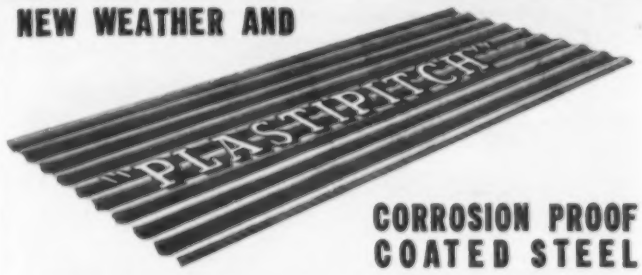
Designed for widely varying operations in fields of assembling, pressing and straightening, this multi-purpose 100-ton HydrOILic press is suitable for either small lot or production line work. (This item appeared in Nov. 1942 issue with illustration inverted. Editor.)

Frame is of welded steel construction while cylinder assembly is of cast steel. Ram is of ground and polished steel fitted with guide head operating in ram guides on inner sides of press. Unit is available with either guided platen or threaded ram. Maximum stroke of ram is 18 inches and maximum throat is 18 inches. Vertical opening is 36 inches. It has working pressure up to 2000 pounds per square inch.

Press has width of 64 inches at base and its depth is 40 inches. Overall, unit stands 11 feet, 6 inches high. Dual control hand tie-up can be furnished to keep operator's hands fully occupied and out of danger. Press is readily adaptable for various special operations by means of alteration of certain key parts. In its operation, it utilizes oil for transmission of power. Either manual or electrical control is available. Infinitely variable adjustment of tonnage exerted by press ram, from approximately 10 tons to full capacity is afforded by separate tonnage adjustment control. Made by **The Denison Engineering Co.**, 1152 Dublin Rd., Columbus, O.

▲ Mention Item NED-6345 when writing ▲

NEW WEATHER AND



CORROSION PROOF COATED STEEL

"Plastipitch" Coated Roofing, Siding and accessories are already in wide use in defense plant construction and maintenance, and provides complete weather and corrosion protection against sunlight, smoke, alkaline, acid or other atmospheric conditions.

Plastipitch is factory applied only and is applicable to many types of prefabricated metals and shapes, this process requires a reasonably clean sheet of metal that is immersed in the coating substance, brought to correct temperature and withdrawn from the tank at a controlled rate, which regulates coating thickness and produces a sheet uniformly coated on both sides and free from waviness typical of roller coated material.

An outstanding characteristic of the Plastipitch process is its ability to provide coatings of special climatic or weather resistant qualities as may be required to meet tropic or arctic conditions.

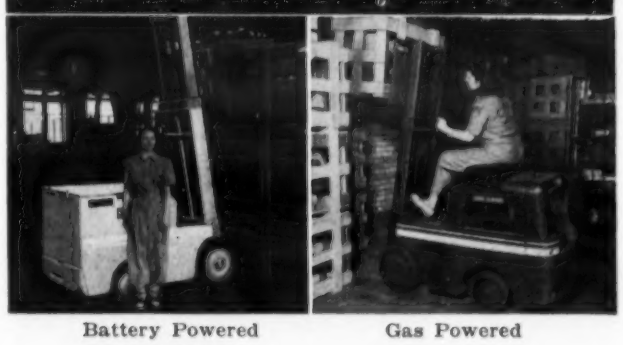
Plastipitch materials are produced in a simple manner, reducing the manufacturing cost materially. The savings thus effected are passed on to the consumer in the form of a lower priced material.

A new booklet on Plastipitch Coated Steel is now ready . . . a copy will be sent on application. This booklet tells the complete story and gives technical data. **The Coated Products Corp.**, Verona, Pa. (P.O. Box L) —Advt.

▲ Mention Item NED-6346 when writing ▲

SERVING THE SERVICES

CLARK FORK TRUCKS



Battery Powered Gas Powered

On the fields, docks and warehouses CLARK FORK TRUCKS are at work transporting materials for our armed forces.

WRITE TODAY.

CLARK TRUCTRACTOR
DIVISION OF CLARK EQUIPMENT COMPANY
BATTLE CREEK, MICHIGAN, U.S.A.

▲ Mention Item NED-6347 when writing ▲

ONE COAT—AIR DRY—NO PRIMER

• This enamel can really take it! Twist it, bend it—scratch it—bang it—no matter how roughly you treat it, the finish won't flake or chip. These features insure long life and trouble-free production. • Air dries to handle in a few minutes—dust rejects eliminated. • Perfect adhesion to steel, aluminum, brass and die castings. • One coat—no primers required. • Flat sheets may be pre-finished and later formed into shape. • Made in various sheens, from full gloss to dead flat—all colors.

Write for samples and specific data.

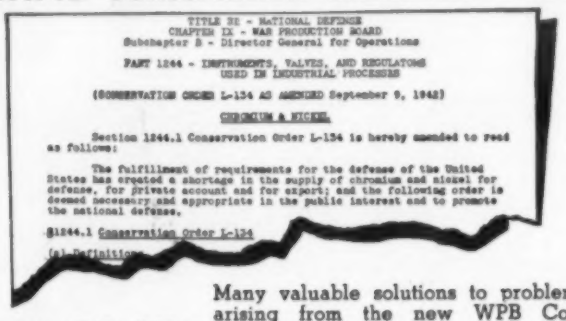
ROXALIN FLEXIBLE FINISHES, INC.
Box 302 • Elizabeth, New Jersey

ROXALIN Flexible FINISHES
"WHERE THE FINISH COUNTS USE ROXALIN"

▲ Mention Item NED-6348 when writing ▲

How to . . . CONSERVE Essential INSTRUMENT MATERIALS

in compliance with W.P.B Conservation Order No. L-134


TITLE 32 - NATIONAL DEFENSE
CHAPTER IX - WAR PRODUCTION BOARD
Subchapter B - Director General for Operations

PART 1244 - INSTRUMENTS, VALVES, AND REGULATORS USED IN INDUSTRIAL PROCESSES

(CONSERVATION ORDER L-134 AS AMENDED September 9, 1942)

CHROMIUM & NICKEL

Section 1244.1 Conservation Order L-134 is hereby amended to read as follows:

The fulfillment of requirements for the defense of the United States has created a shortage in the supply of chromium and nickel for defense, for private account and for export; and the following order is deemed necessary and appropriate in the public interest and to promote the national defense.

§1244.1 Conservation Order L-134

(a) Definition

Many valuable solutions to problems arising from the new WPB Conservation Order L-134, which drastically limits the use of various materials for thermocouples, lead wire, thermometer bulbs, protecting tubes, etc., are given in the recently published Wheelco Supplement to Thermocouple Bulletin S2-3. Request your copy of this Supplement and the issue of Wheelco Comments which deals with Thermocouple construction and maintenance.

Wheelco Instruments Co.
629 W. HARRISON STREET • • • CHICAGO, ILLINOIS
Originator of "Electronic Principle" Temperature Controls

▲ Mention Item NED-6349 when writing ▲

Use the NEW G-E Forlamp ballast for fluorescent-lighting installations

Saving in cost: This 265-volt, 100-watt ballast—which operates four 100-watt fluorescent lamps—does the work of *two* 100-watt Tulamp ballasts yet costs no more than *one*.

Saving in materials: Requires 48% less copper, 47% less iron and steel, and 50% less aluminum than two Tulamp ballasts of the same rating.

Saving in power: Electrical losses are 46% less than the losses of two Tulamp ballasts.

Clip this ad and mail to Section B408-12, General Electric, Schenectady, N. Y. We'll send you the complete story (Bulletin GEA-3293D) on ballasts for MAZDA F lamps, 4 to 100 watts.

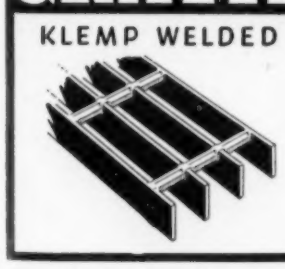
GENERAL ELECTRIC
408-12-5205

▲ Mention Item NED-6350 when writing ▲

Safe Footing, with light and air, speeds work!

KLEMP STEEL NON-SLIP GRATINGS

KLEMP WELDED



For heaviest duty. Hexteel rods pressure welded at right angle on top flat bearing bars set on edge.

KLEMP DIAMOND

Straight and bent bars securely riveted. Truss construction for maximum strength.

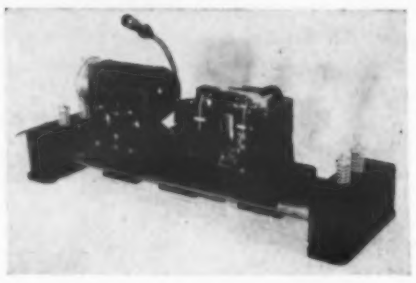
FOR PLATFORMS, WALKWAYS, BRIDGES, STAIRS, CATWALKS, BOILER AND ENGINE ROOMS, ETC.

Easy to paint and clean. Practically no maintenance costs. Lifetime service. Ask for complete Catalog of Klemp Steel Flooring.

WM. F. KLEMP COMPANY
"Steel Flooring Specialists"
6603 S. Melvina Ave. Chicago, Illinois

▲ Mention Item NED-6351 when writing ▲

BALANCING MACHINE



High speed rotating parts of all types may be balanced readily by this Dynograph balancing machine which is available in commercial form for use on war work carrying high priorities. Being extremely sensitive, device determines and indicates both amount and position of unbalance in rotating parts through single reading on screen of cathode ray tube. This tube responds instantly to voltages applied to its control plates.

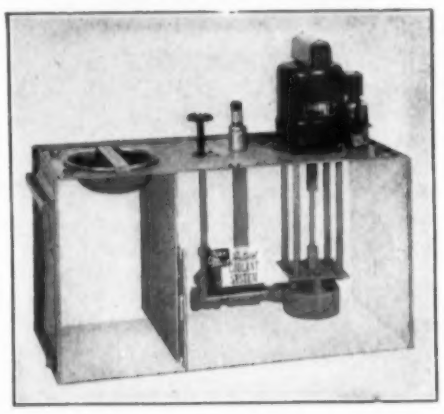
Control voltages for cathode ray tube operation are generated as result of rotation and vibration of unbalanced part which spins in free floating bearings. Rotation is accomplished by driving part either under its own power or from external motor through double idler arrangement and light fabric belt.

Amount of unbalance is shown directly by height of trace on scale of cathode ray tube. Position of unbalance is also shown by this trace, by indicating phase relationship between voltage produced by vibration and that produced by rotation. Operator can determine unbalance in either of two selected correction planes. Scale may be calibrated easily in practical units of correction such as inches of solder or depth of drilled hole.

Machine is flexible and may be readily adapted to various balancing jobs within its capacity. Unit operates on 110-volt, 60-cycle lighting circuit. It is designed for bench mounting and has bed length of 40 inches, with 15-inch length maximum between bearings and maximum swing of 14 inches. Made by **R. B. Annis Co.**, 1101 N. Delaware St., Indianapolis, Ind.

▲ Mention Item NED-6352 when writing ▲

PORTABLE COOLANT SYSTEM



Delivering controlled volume of coolant flow at any rate from 10 to 1000 gallons per hour, this model G-10A coolant system is portable and uses centrifugal pump. Unit supplements two small models which have gear pumps and deliver 50 to 165 gallons of coolant per hour. Large coolant volume and high flushing action are afforded with this system, making equipment particularly applicable for multiple spindle and deep drilling work, drill press installations, large cut-off machines, large grinders, turret lathes and as standby for central coolant systems.

Centrifugal pump has high stress casting, with sleeve bearings. Intake orifice is 1½ inches and discharge 1 inch in diameter. Both single and three phase, ¼-horsepower motors for 110/220 or 220/440 volts respectively, are available. Tank has 40-gallon capacity and is 16 inches deep, 16 inches wide and 36 inches long. Double baffle plate provides forced settling. Separate filter screen in tank cover may be removed easily for cleaning. Tank finish is corrosion resistant. Valve for controlling flow is easily accessible. Made by **Gray-Mills Co.**, 221 W. Ontario St., Chicago, Ill.

▲ Mention Item NED-6353 when writing ▲

SOLENOID CONTACTOR

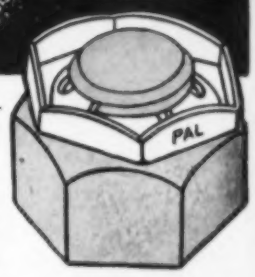
Adaptable for numerous applications requiring heavy current control in aircraft and other industrial equipment, this series B-5 solenoid contactor is built to U. S. Army Air Force specifications. Contact rating is 50 amperes continuous and unit operates on 24 volts direct current. Coil current produced is 210 milliamperes. It has double pole, single throw, normally open contacts and weighs 11.2 ounces.

Unit is claimed to resist acceleration and vibration of over ten times gravity. It operates in any position and is so constructed that it may be disassembled with pliers and screwdriver, facilitating service. All metal parts are plated to withstand 200-hour salt spray test. Made by **Guardian Electric Mfg. Co.**, Dept. B-5, 1626 W. Walnut St., Chicago, Ill.

▲ Mention Item NED-6354 when writing ▲

NOW READY!

NEW PALNUT LOCKNUT MANUAL



WRITE TODAY FOR YOUR FREE COPY

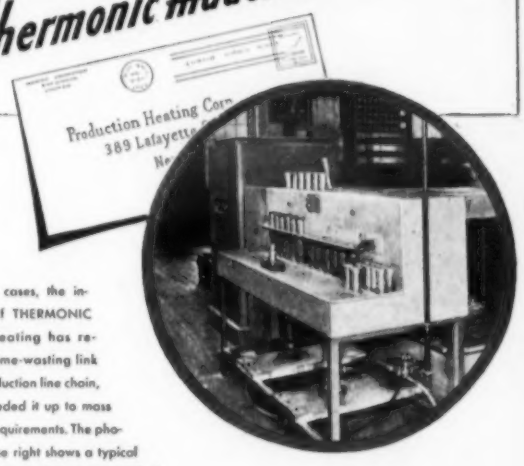
Every designer, engineer and production man interested in keeping assemblies tight, will find the new PALNUT Locknut Manual chockfull of valuable information on the subject. It describes and illustrates the Double Locking action of PALNUTS, explains how and where to use them, plus full data on dimensions, sizes, materials and finishes available. Write today for your free copy of the PALNUT Manual.

ADVANTAGES
Light Weight • Small Space • Low Cost • Speedy Assembly • Utmost Security Interchangeable with other approved devices.

THE PALNUT COMPANY
Manufacturers of Locknuts and Self-Locking Nuts
45 CORDIER STREET IRVINGTON, N. J.

▲ Mention Item NED-6355 when writing ▲

Some call it Thermonic ~~Induction~~ Production Heating



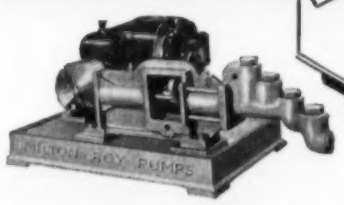
In numerous cases, the introduction of THERMONIC Induction Heating has removed the time-wasting link from the production line chain, and has speeded it up to mass production requirements. The photograph at the right shows a typical THERMONIC production setup, installed at the [redacted] plant, turning out 15,000 brazes on [redacted] in a 20 hour day. Plants from coast to coast are using THERMONIC equipment in order to keep up on their production schedules. Why not use the wealth of "production" experience possessed by the THERMONIC Research and Development Engineering Staff to solve your next production problem?

A series of Data Sheets completely covering the subject of Induction Heating will be issued monthly. Nos. 1, 2, 3 and 4 are ready for you. Write to Department A on your company letterhead.

INDUCTION HEATING CORPORATION
Designers • Builders • Of Thermonic Heat Treating Equipment
389 LAFAYETTE STREET, NEW YORK CITY, N. Y.

▲ Mention Item NED-6356 when writing ▲

This is the *Step-Valve*



. . . that Pumps Liquid Latex, Salt Slurries, Acid Sludge, Other "Difficult" Materials

Try Milton Roy Pumps for those "impossible" jobs . . . you'll be amazed at the way the patented Step-Valve handles them, without clogging or air-binding. Use Milton Roy Pumps for accurate volume control, from one quart to 2600 gals. per hour; for pumping against high pressures, up to 20,000 lbs. per sq. in.; for pumping light solvents as well as heavy, viscous materials; for practically all chemical services.

These pumps are simple, rugged, with few moving parts, built-in integral-gear motors and adjustable stroke from zero to maximum capacity (while operating if desired) for precise volume control. For description of Simplex, Duplex and Special Types, specifications of entire line and complete information, write for Catalog 941.

We are still making prompt deliveries of most standard units. If we can help in your war effort 'phone or wire.

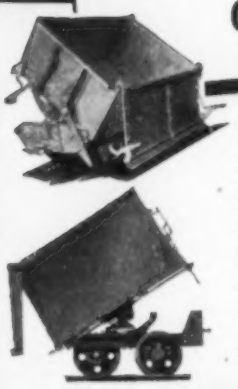
MILTON Roy PUMPS
1364 E. MERMAID AVE., CHESTNUT HILL, PHILA., PA.

▲ Mention Item NED-6357 when writing ▲

WAR MATERIALS MOVE FASTER WITH FEWER TIME-OUTS WITH

PSC CARS

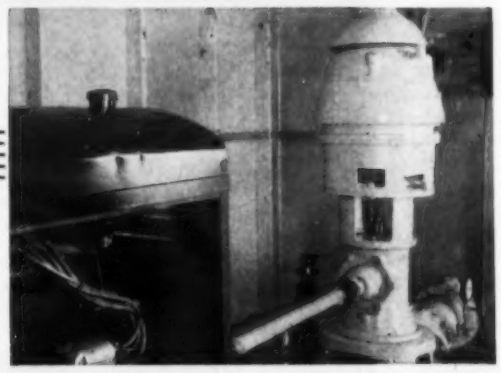
ON THE JOB!



When you reduce costly time-outs for repairs, you naturally speed up the flow of your vital war materials. PSC Cars are ruggedly built to give you 24-hour continuous performance with minimum maintenance.

PRESSED STEEL CAR CO., INC.
(INDUSTRIAL DIVISION)
PITTSBURGH, PA.

▲ Mention Item NED-6360 when writing ▲



"SOMEWHERE IN U. S. A." F-M PUMPS ARE IN THE ARMY NOW

Faced with the problem of building a multimillion man army in record-breaking time, the Army, remembering its experience of the last war, planned to provide soldiers in training with as many comforts, conveniences, and safeguards to health as could be made available in a camp.

Water supply was a matter of primary concern. It had to be **safe**—and it had to be **dependable.** Typical of the pumping equipment now supplying water for many smaller defense units are Fairbanks-Morse Deep Well Turbine Pumps shown in the above installation—"somewhere in the U.S.A."

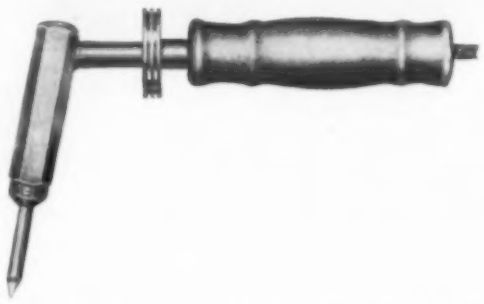
This installation consists of two 8″ Oil Lubricated Deep Well Turbines of five stages each, driven by F-M Vertical Hollow Shaft Motors and one 8″ pump of the same type with a combination drive of an F-M Vertical Motor and a 24.8-hp. gasoline stand-by power unit.

Use your priority to get F-M dependable pumping equipment—no stoppage . . . no breakdown . . . no letdown—**now** or later. And remember that today's F-M Turbines are more efficient than earlier models even if earlier models have lost practically none of their original efficiency. That means a power saving which eventually pays for the pump. For details, write Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago.

▲ Mention Item NED-6361 when writing ▲

HATCHET SOLDERING IRON

Offering advantage of better balance on certain soldering jobs, this hatchet type electric soldering iron is claimed to decrease operator fatigue. It thus makes possible increasing of



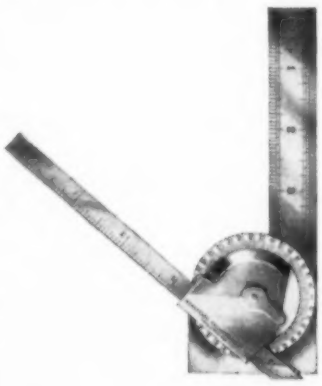
production and maintenance of high quality of soldered joints. Additional feature of this offset design is that plug tip irons are used so that elements may be replaced when required.

Standard wattages available are 80, 100, 150, 175 and 200 watts. Tip sizes include ⅜, ½, and ⅝-inch units. List prices range from $8 to $11.50, depending upon wattage rating and tip diameter. These irons are Underwriters' Laboratories approved and are stated as meeting requirements of all government specifications. Made by **Hexacon Electric Co.,** 145 W. Clay St., Roselle Park, N. J.

▲ Mention Item NED-6362 when writing ▲

POCKET PROTRACTOR

While intended for general use, this Xactor improved protractor affords accuracy and is adapted for use by chief engineers, research engineers, tool grinders, machinists and other persons engaged in engineering. It fits readily into user's pocket and is thus quickly available for use.

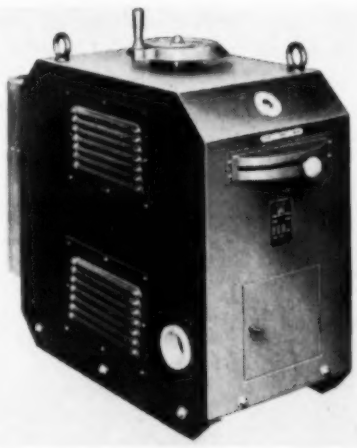


Device has adjustable sliding arm carried by pivoted segment that can be swung full 360 degrees. Unit will measure directly any small or large surface angle such as encountered in grinding tool bits, without aid of attachments. Taper on shallow blind holes or tooth angles on broaches may be determined by sliding arm to suit conditions. Graduations are arranged so that component angle, as well as required angle, can be read directly. Sliding arm is graduated so that depth of holes can be measured.

Protractor is light in weight. It has no projecting set screw or other clamping device, facilitating tool for carrying in pocket. Leather case is furnished for protecting instrument. List price is $10.50. Made by **Industrial Engineering Co.,** P. O. Box 433 311 Sixth Ave. S., Minneapolis, Minn.

▲ Mention Item NED-6363 when writing ▲

HEAVY DUTY WELDER



Having welding range of 20 to 625 amperes, this model 45 heavy duty welder is manually operated. This all-purpose machine is capable of handling wide variety of jobs ranging from light sheet metal to heavy production work.

Operator may select desired heat from two ranges by manipulating manual switch. Low range provides heats from 20 to 200 amperes and high range gives heats from 200 to 600 amperes. Switch has "off", "high" and "low" positions. Stepless heat control is maintained throughout entire output range. Input is in direct proportion to output.

Power factor correction is provided through use of oil type capacitors. Transformer employes principle of flux diversion which permits stepless control. It is claimed that efficiency is high and magnetic blow is eliminated. Quick-starting arc remains stable and is easily handled in all welding positions.

Transformer primaries and secondaries are amply spaced on separate legs of core, preventing breakover from reaching operator. Core design and absence of external reactors prevent welding surges. Transformer core is laminated of die-stamped plates of transformer steel. These are rigidly bolted in place, supported by heavy steel frame to eliminate noise or any tendency to shift under load. Made by **Glenn-Roberts Co.,** 1009 Fruitvale Ave., Oakland, Calif.

▲ Mention Item NED-6364 when writing ▲

MOTORS *Tailored* To Fit Your Needs

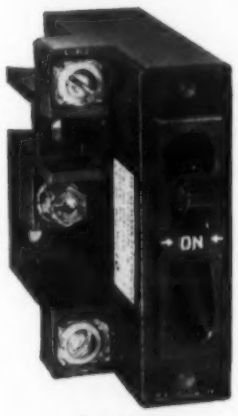
MANY times a motor with standard windings is not the best motor for the job. Or a change in frame design or size means a better application to your product.

Peerless is equipped to handle large or small orders of any special design that will give you maximum motor efficiency, trouble-free operation and minimum upkeep. Send us your motor problems. 50 years of building motors have given Peerless engineers experience in meeting any motor problem.

THE Peerless ELECTRIC COMPANY
WARREN, OHIO

▲ Mention Item NED-6365 when writing ▲

HEINEMANN "Re-Cirk-it" AUXILIARY CIRCUIT BREAKERS



have kept many a motor off the scrap pile

While we sorely need the scrap, your motors will do more to help lick our enemies by providing vitally needed power.

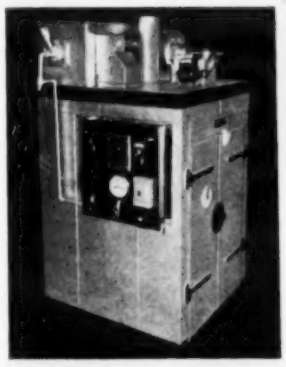
This efficient breaker stands guard between power source and fractional hp. motors to prevent burn outs and locked rotors. Timed to the split second, they open instantly on short circuits and dangerous overloads but a delayed trip permits harmless, momentary overloads such as caused by inrush current when motor starts. Low in cost and small in size, this breaker is made in all ratings between 250 milliamperes and 35 amperes for 110 volts AC. Also in low ratings for DC.

Send for Catalog 40 showing full line

HEINEMANN CIRCUIT BREAKER CO.
Subsidiary to Heinemann Electric Co. Est. 1888
106 PLUM STREET TRENTON, N. J.

▲ Mention Item NED-6366 when writing ▲

GAS - OIL - ELECTRIC
GKS BAKING OVENS



In STANDARD SIZES for PROMPT DELIVERY

EFFICIENT . . FLEXIBLE

The Core Baking Oven you need—any size—will be delivered faster from GKS! The ovens are standardized . . . standard units are added to both width and depth of basic oven (shown here) to meet your requirements.

Phone, Wire, or Write for additional information

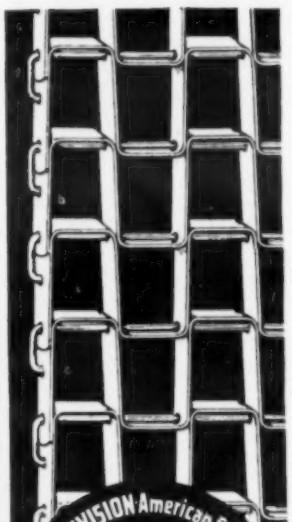
GEORGE KOCH SONS, INC.
EVANSVILLE INDIANA

▲ Mention Item NED-6367 when writing ▲

Fenwal INCORPORATED
20 MAIN STREET ASHLAND MASSACHUSETTS

▲ Mention Item NED-6368 when writing ▲

FREE PLANNING SERVICE



—to help you work out your conveyor belt problems!

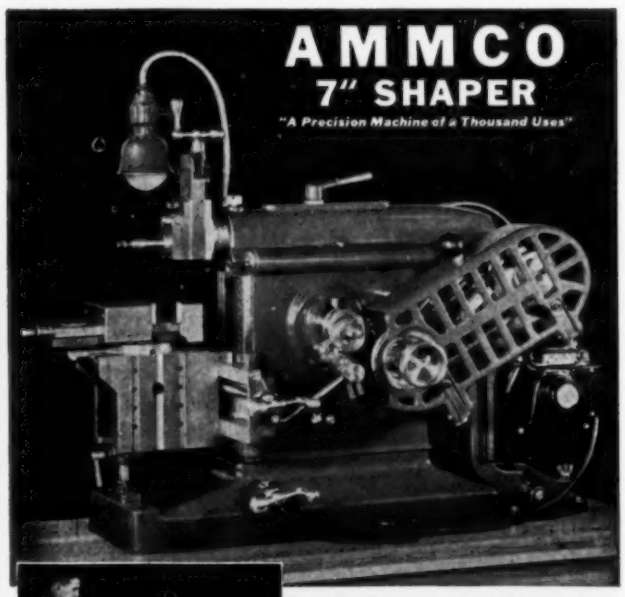
IF you are wondering how to prevent production line delays resulting from conveyor belt troubles, perhaps we can help you. Our engineers are well experienced in applying metal conveyor belts to many types of products and equipment. Cyclone Metal Conveyor Belts are made in two types, Chain Link and Flat Wire—in a variety of mesh openings and widths. Sturdy—unharmed by water, steam, temperature changes. Get the facts about them today.

CYCLONE FENCE DIVISION
(AMERICAN STEEL & WIRE COMPANY)
Waukegan, Illinois
United States Steel Export Co., New York

USS CYCLONE Red Tag METAL CONVEYOR BELTS
CYCLONE FENCE DIVISION American Steel & Wire Company
UNITED STATES STEEL CORPORATION SUBSIDIARY

UNITED STATES STEEL

▲ Mention Item NED-6369 when writing ▲



IT'S PORTABLE
-- Saves Steps and Time --
Don't tie up a big shaper when so many jobs can be done just as accurately and much quicker and more economically on the AMMCO 7" PRECISION SHAPER.
Available for stationary installation or mounted on portable cabinet easily rolled to the mechanic's workbench . . . Write today for specifications and prices.

AUTOMOTIVE MAINTENANCE MACHINERY CO.
2110 Commonwealth Avenue North Chicago, Ill.

▲ Mention Item NED-6370 when writing ▲

SMALL AIR CLAMP

Developed for use on assembly jigs and other multiple applications, this Midget Air Clamp is of particular value in aircraft industry on all operations involving joining by welding, riveting or bolting of two or more component parts of any assembly.

Units in any setup can be operated by single master valve. Lock-up and release of assemblies is instantaneous, affording maximum production. Compact size of device permits installation in cramped corners which would be difficult to reach with more bulky mechanical clamps.

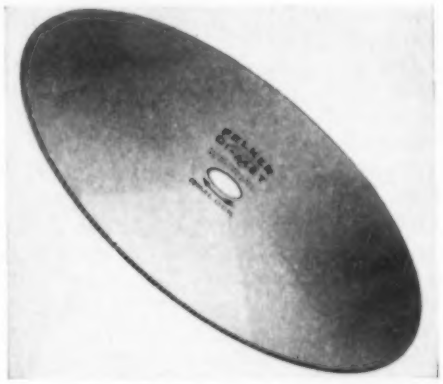
Special adjustments are unnecessary because air operated ram holds with equal pressure at any point along its stroke. Any desired group of clamps can be controlled independently of other groups in given assembly. This is of importance in assemblies where primary members require locking up before secondary numbers are laid in.

Many kinds of light bench assembly operations and delicate drilling jobs can be facilitated through use of these units actuated by foot control valves. This allows full freedom of operator's hands to handle work pieces.

Device delivers 80 pounds pressure when used on line pressure of 100 pounds per square inch. Stroke of ram is ⅝ inch. Internal return spring withdraws ram when air is exhausted from cylinder by control valve. Made by **Mead Specialties Co.**, Dept. M-39, 15 S. Market St., Chicago, Ill.

▲ Mention Item NED-6371 when writing ▲

ABRASIVE CUTOFF BLADE

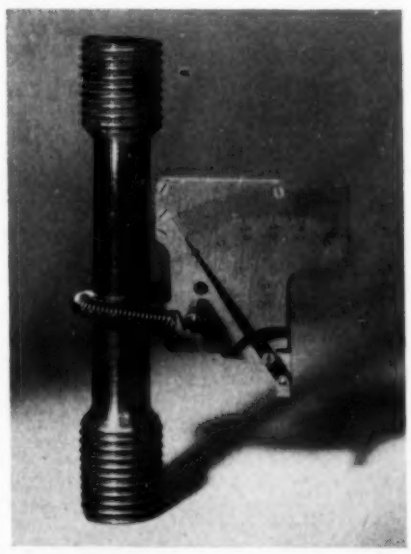


Developed for efficient cutting of hard, brittle non-metallic materials such as quartz, glass, porcelain, tile, ceramics and clap products, this Di-Met Rimlock diamond abrasive cutoff blade is available in two types. One has hard steel bond which makes blade exceptionally stiff and fast cutting. Other has copper bond which, though not quite so stiff as steel, operates with softer action and with some increase in life.

These blades are claimed to differ from former diamond abrasive blades in use of special bonding process which rigidly locks diamonds in rim of wheel without crushing. This feature is claimed to result in longer life and fast cutting ability. Made by **Felker Mfg. Co.**, Torrance, Calif.

▲ Mention Item NED-6372 when writing ▲

STRAIN GAGE



Of mechanical type, this Porter-Lipp strain gage has been developed to meet demands of volume and technique of structural testing. Device is accurate, light in weight, compact, convenient to use and inexpensive. Strain multiplication factor is approximately 300, with range of 0.008 inch or better.

Weighing only 0.4 ounces, unit has overall dimensions of 1¾ by 2 by ⅝ inches. It is graduated so that each division corresponds to strain of approximately 0.0001 inch and it has readable accuracy of 0.00002 inch for gage length of 1-inch. This gage is effective replacement and is claimed to be superior to devices for this purpose which were imported from Europe before the war. Made by **Baldwin Southwark Div.**, Baldwin Locomotive Works, 942 Chester Pike, Eddystone, Pa.

▲ Mention Item NED-6373 when writing ▲

Get rid of it with the
TORNADO
PORTABLE INDUSTRIAL VACUUM CLEANER

VACUUM Cleaning—the only way to *properly* and *permanently* remove dust and dirt—is at its best with the TORNADO—*power, portability, performance,* considered.

Power! A full 1 h. p. motor develops tremendous full-throated suction that does a thorough dust and dirt-removal job. *Portability!* Weighs only 40 lbs. *Performance!* Sustained cleaning efficiency.

Write for details and FREE TRIAL Offer

TAKE THE DUST OUT OF INDUSTRY
BREUER ELECTRIC MFG. CO.
5105 N. RAVENSWOOD, AVE., CHICAGO, ILL.
with BREUER'S BALL BEARING
TORNADO
PORTABLE INDUSTRIAL VACUUM CLEANER

▲ Mention Item NED-6374 when writing ▲

Desert Heat, tropic sweat, arctic subcold, ocean salt—they're all alike to tough Harper Fastenings.

That's why these versatile workers have been drafted for service in tanks, ships, planes—wherever fighting equipment has to fight rust and corrosion, extra stress and strain.

BRASS
BRONZE
COPPER
EVERDUR
MONEL
STAINLESS

WELL NAMED "EVERLASTING"

Harper Fastenings—bolts, nuts, screws, washers, rivets and special items—are made only of brass, bronze, copper, Everdur, Monel or stainless steel.

4320 STOCK ITEMS

Harper Service is unique for the tremendous stock, including many hard-to-get items—and special machinery for turning out off-standard items with unusual speed.

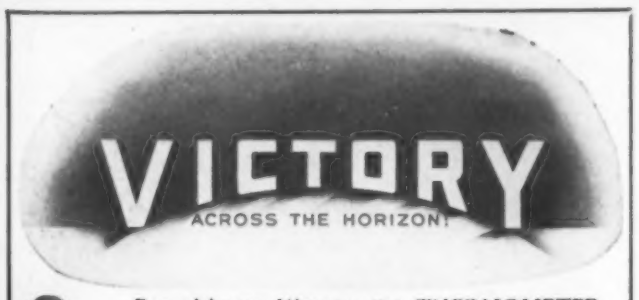
A REFERENCE ESSENTIAL

Harper's Catalog is actually an invaluable reference volume—80 pages, 4 colors, 193 illustrations, packed full of useful data. Simply ask for it on your company letterhead.

The H. M. HARPER COMPANY,
2628 Fletcher Street • Chicago
45 Broadway • New York City
Offices in Principal Cities

HARPER Chicago
EVERLASTING FASTENINGS

▲ Mention Item NED-6375 when writing ▲



For ultimate Victory, the THERMOMETER will play an important part.

No purchase today can be overlooked for each thermometer that gives you smooth running production is a big asset in any plant. Delays for breakage are costly.

PALMER Thermometers:

- ★ Easy-Reading RED column eliminates errors;
- ★ Sturdily built for long life;
- ★ Guaranteed for permanent accuracy.

You cannot afford to take a chance today. Select your next purchase carefully and remember PALMER Thermometers are helping to bring Victory closer.

(Catalog No. 300-D sent promptly)

red reading mercury

THE PALMER CO.

MFRS.: INDUSTRIAL, LABORATORY, RECORDING & DIAL THERMOMETERS

2523 NORWOOD AVE., CINCINNATI, NORWOOD, O.

CANADIAN BRANCH: KING AND GEORGE STS., TORONTO

▲ Mention Item NED-6376 when writing ▲

SPRACO CENTER-JET NOZZLES

deliver a solid full cone spray of uniform distribution over the area covered. They are particularly suited to processes involving quenching, cooling, washing, and spraying. We can furnish these nozzles in brass, bronze, stainless steel, or any other machinable metal specified, in a wide range of sizes and capacities.

Other types which we manufacture include nozzles to produce hollow cone sprays and flat fan-shaped sprays, together with two fluid nozzles for mixing two fluids, or a fluid and a gas. For complete descriptions and performance data write for NOZZLE CATALOG.

OTHER SPRACO PRODUCTS

include Air Washers, Cooling Systems, Humidifying Systems, Automatic Spray Finishing Machines, Spray Painting Equipment, Battery Spray Moistening Equipment, Fire-Fog Equipment and Powder Blowers.

Write for Bulletin G-100

SPRAY ENGINEERING CO.

106 Central St., Somerville, Mass.

▲ Mention Item NED-6377 when writing ▲

EC&M OIL-IMMERSED OR AIR-BREAK

PUSH BUTTON

Type EO for Class 1, Group D Hazardous Locations

★ *The Ideal Push-Button for Lighting Circuits or Control Stations*

APPROVED and listed by the Underwriters' Laboratories for Class 1, Group D Hazardous Locations. Sturdy contacts and operating levers. The tank screws on—may be quickly removed for wiring or inspection. Has provision for padlock to lock in open position.

Ask for Bulletin 1105-B giving complete description, ratings, etc.

THE ELECTRIC CONTROLLER & MFG. CO.

CLEVELAND, OHIO

BRAKES MAGNETS LIMIT-STOPS MOTOR-CONTROL

▲ Mention Item NED-6378 when writing ▲

TERMINAL CRIMPING TOOL

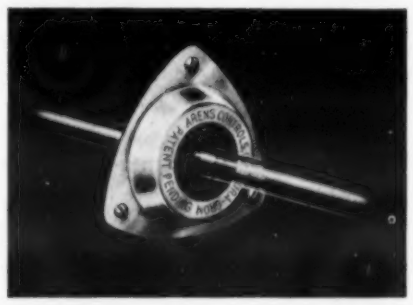
Three perfect crimps are made at one time through use of this Hand-Die installation tool which is designed specifically for use with Diamond Grip solderless insulation support terminals. Tool is so constructed that unskilled workers can quickly achieve production line efficiency without usual prolonged training period.

Insertion gage positions terminal automatically. Crimping jaws for both wire and insulation are tool steel dies which are adjustable to accommodate various insulation and wire diameters. Leverage with 15 to 1 ratio is provided on self-opening type handles. When jaws are closed tightly, a perfectly crimped connection has been made. There is no selection of pressure necessary by operator.

Army and Navy wire sizes are clearly marked on tool which may be converted readily for left or right hand operation, as may be required. Made by **Aircraft-Marine Products, Inc.**, Dept. K, 286 N. Broad St., Elizabeth, N. J.

▲ Mention Item NED-6379 when writing ▲

TUBING GROMMET



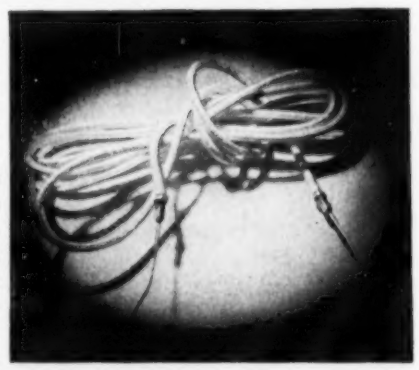
Affording fume and water tight support for air, oil and hydraulic lines, electrical cables, flexible remote control casings and similar applications through firewalls or bulkheads, this Dura-Grom grommet eliminates need for many quick disconnect and firewall fittings. Device slips over line, cable or tube and fits snugly against wall, being held in place by bolts or screws.

Unit consists of oil-resistant synthetic rubber disc and cadmium plated steel cup retainer for securely attaching it to wall. Packing member is claimed to afford considerably more bearing surface than regular grommets. Retainer cup has large enough opening to permit slipping over assembled line or tube, including fittings. Fittings need not be disassembled during installation. Cadmium plating assures resistance to corrosion.

Multiple lines can be supported by single unit. Individual openings are provided in disc for each line. Considerable installation time is saved because tubing assembly can be slipped through retainer and split rubber disc applied over lines prior to fastening device to wall. Made by **Arens Controls, Inc.**, 1335 S. Halsted St., Chicago, Ill.

▲ Mention Item NED-6380 when writing ▲

FLEXIBLE HEATING ELEMENT



Available in any length, Glasohm is low-power flexible heating element which is particularly adapted for use in limited space. It is also applicable as flexible power resistor. Construction features resistance wire wound on fiber glass core, with outside protection afforded by braided fiber glass covering. While practically unbreakable and virtually indestructible, fiber glass is extremely flexible.

Unit can be bent readily or compacted to fit snugly about parts to be heated. It may also be jammed into tight spaces without affecting its efficient heating means.

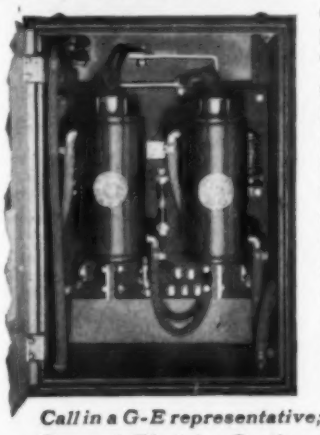
Typical Glasohm heating elements range in length from a few inches up to several feet. They can be made in any required length and provided with any type of terminals. Wattage ratings are from 1 to 4 watts per body inch, depending upon application. Operating temperatures range up to 750 degrees Fahr.

Typical applications include those as heating elements in soldering irons, electric pencils, curling irons, water immersion heaters and other low-power appliances. They may also be used for temperature controlled ovens, for oscillating radio crystals, heating of aviation and marine instruments, localized heat for chemical apparatus and laboratory equipment, and in similar applications. Made by **Clarostat Mfg. Co.**, 289 N. Sixth St., Brooklyn, N. Y.

▲ Mention Item NED-6381 when writing ▲

How a $600 Investment SAVES $1800 A YEAR

FOR ONE RESISTANCE-WELDING USER



ONE Midwestern electrical manufacturer changed from mechanical contactors to G-E ignitron contactors at a cost of $600. The first year this electronic method saved him $1800.

Today that saving in dollars is not so important. But in terms of time and material conservation, it is vital! G-E ignitron contactors reduce maintenance by eliminating mechanical wear. They speed production by avoiding mechanical inertia. No contact tips to dress. No noise. Save space by overhead mounting.

Call in a G-E representative; ask for Bulletin GEA-3058B. General Electric, Section 645-12, Schenectady, N. Y.

GENERAL ELECTRIC

SCHENECTADY, N. Y.

▲ Mention Item NED-6382 when writing ▲

The new, tested and proved UPTON Heat Measuring Control temperature controller adds the exact amount of heat for any piece of work, puts the heat into the salt bath for the exact period it is required and then, when the time is up, shuts the heat off and tells the operator to take the work out.

In use for many months on some of the most difficult heat treating operations—where operators with no previous knowledge of heat treating are turning out perfectly treated, high speed steel cutting tools—the Upton Heat Measuring Control even warns the operator if he makes an error in excess of 3°F. in setting the control!

Unlike the conventional "on and off" control with its wide fluctuations, the Upton Heat Measuring Control varies between a "high" and "low" temperature value, rather than an "on" and "off". The current supply never goes "off" except when the operator has made an error. Then it shuts "off" and warns him.

The Upton Heat Measuring Control and a battery of High Temperature Furnaces do not require help experienced in heat treating. All Upton Furnaces, as well as pots, are guaranteed.

Tell us about your heat treating problem.

Send Now... for more information about the New Upton Heat Measuring Control.

UPTON ELECTRIC FURNACE DIVISION

Commerce Pattern Foundry & Machine Company

We build the furnace using the ELECTROTHERMIC-PERMEATION principle of operation

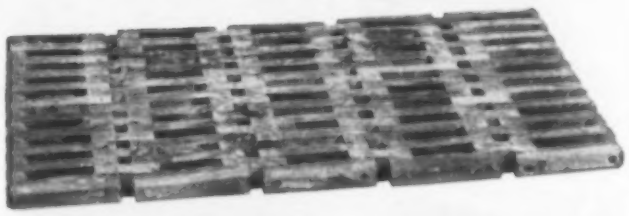
7439 MELVILLE at GREEN • DETROIT, MICHIGAN, U. S. A.

▲ Mention Item NED-6383 when writing ▲

VICTORY INDUSTRIAL FLOOR MAT

ALL WOOD CONSTRUCTION

(No Priority Needed)



WATER & OIL RESISTANT . . . REDUCES FATIGUE

The VICTORY INDUSTRIAL FLOOR MAT was originally designed to substitute for rubber, but in many applications has proven much more satisfactory. For example: In front of lathes, drills, boring machines or grinders—oil does not harm the wood and the open spaces receive the chips. The VICTORY MAT does not "creep" as do rubber mats and, because it is flexible, can be readily cleaned.

Take the "curse" off concrete floors with the VICTORY MAT. Stops heat loss from the feet to the floor. *Reduces fatigue* and thereby increases production and morale. Constructed of soft wood blocks hinged and held together with hardwood dowels. Water and oil resistant—no sharp edges—attractive finish—reversible. Stock sizes: 18" x 28"— 18" x 39"—24" x 51"—24" x 75". All mats 1-3/16" thick. Special sizes on order.

Write today for complete information on the VICTORY MAT. Also ask about "SAFETY" floor cleaning compounds that pick up oil and grease. . . **Fisher Equipment Co., 6315** Ellsworth Ave., Detroit, Mich. —**Advt.**

▲ Mention Item **NED-6384** when writing ▲

Why 3 Types of Surface Plates

	SIZES	APP. WEIGHT	BEARING SURFACE	TOLERANCE
A	24 x 36	450	20 - 25	.0001
B	24 x 36	450	12 - 15	.0003
C	24 x 36	450	6 - 8	.001

Because — only in having three different tolerances can we supply you with the economically efficient plate best suited for your needs.

A — MASTER ACCURATE SURFACE PLATES
Note the extreme accuracy and .0001 - 0002 tolerance and 20 - 25 bearings per square inch, constant in all sizes from 14 x 18 to 48 x 96.

B — ACCURATE SURFACE PLATES
Same weight, size and famous 3 point suspension as in type A. The .0003 - .0004 tolerance and 12 - 15 bearings per square inch are constant in all sizes.

C — SURFACE PLATES
Same as A & B except hand scraping is not carried so far. Has .001 - .0015 tolerance and 6 - 8 bearings per square inch. Planer finish plates also available.

LOMBARD GOVERNOR CORPORATION
600 MAIN ST., ASHLAND, MASS., U. S. A.

▲ Mention Item **NED-6385** when writing ▲

NEW 1600°F. FANS

Despatch announces a complete line of all-welded heavy duty acid resistant fans having capacities ranging from 1000 to 20,000 C.F.M. These fans have been thoroughly tested on Despatch ovens and dryers over seven years. They are now offered to the trade for the first time.

Choose a Despatch fan for your next HEAVY DUTY, ACID RESISTANT fan requirement. Note the improved performance and the long trouble-free service it will provide.

Write for design and construction details, prices and performance data.

DESPATCH OVEN COMPANY
MINNEAPOLIS · MINNESOTA

▲ Mention Item **NED-6386** when writing ▲

PLYWOOD ASSEMBLY NUTS

Designed so that it can be instantly driven into anchored position this self-locking Speed Nut is useful for plywood assembly, particularly in aircraft field. It has two pair of

integrally formed attaching legs. When driven into thick plywood cam-like structure of attaching legs forces them outward as they are driven into plywood, permanently holding nut with firm spring tension grip in wood. This is shown in Fig. 3. When driven into thin plywood sections, attaching legs "peen" over when driven against backing plate. See Fig. 1.

Fastening device weighs only 3½ pounds per thousand. Its large bearing surface spreads load over wide area. These nuts for plywood are made for use on both Air Corps 530-8 and Air Corps 530-10 screws which are standard type "Z" sheet metal screws. Made by **Tinnerman Products Inc.,** 2044 Fulton Rd., Cleveland, O.

▲ Mention Item **NED-6387** when writing ▲

DRUM-LOADING TRUCK

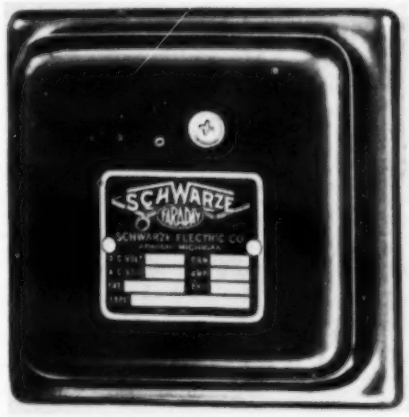
Designed for safe, quick handling of drums, barrels, kegs or any other container having a chime or bead, this pressed steel Upsy Truck carries loads weighing up to 1000 pounds. It makes moving and trucking of heavy drums and barrels one-man job. This handling device permits operator to load container without first moving it away from adjacent drums.

Sliding hook on center rail catches top bead or chime of drum or barrel. Operator pulls down on handles, tilting drum towards him. This allows nose prongs to slide under bottom bead of drum or barrel. Then as handles are lowered to trucking position, nose prong lifts drum or barrel off floor and load is ready to be moved. To unload, handles are raised so that drum tilts forward. Range of adjustable hook is from 16 to 40 inches, permitting handling of small kegs as well as drums.

Unit is equipped with machined semi-steel wheels or with Floor-Saver tread wheels. It measures 59 inches long, 22 inches wide at handles, 13½ inches wide at nose, 10 inches in wheel diameter and weighs 89 pounds. Made by **American Pulley Co.,** 4245 Wissahickon Ave., Philadelphia, Pa.

▲ Mention Item **NED-6388** when writing ▲

AUDIBLE SIGNALS



Applicable for use as sentinels on many different types of industrial machines, processing and operating equipment, this line of audible signals includes electric bells, horns and buzzers. They may be connected so as to provide warning in event of failure, completion, overheating and other occurances which could affect operation of equipment.

Typical applications include those of liquid levels being too high or low, excessive or failure of pressure, and other conditions. Manufacturers of pressure lubricating equipment use heavy duty bells as low and high pressure alarms. Diesel equipment is being fitted with high powered horns. Audible signals are used on processing equipment to indicate progress of operations and to give positive warnings of dangerous conditions.

Schwarze-Faraday heavy duty electric bells are available in sizes ranging from 3 to 12 inches. Kodaire horns in wide range of sizes and types are electric air-blast signals. Also available are vibrating horns and unit air pressure horns. All equipment is designed for standard alternating and direct current voltages. Made by **Schwarze Electric Co.,** 1810 Church St., Adrian, Mich.

▲ Mention Item **NED-6389** when writing ▲

Save time by using

HEIN-WERNER HYDRAULIC JACKS

Available for quick delivery to plants doing war work

In these critical times when time is so important, every minute saved means more production hours. If you have war production jobs involving lifting, pressing, bending, etc., you probably can speed up your work and save time by using Hein-Werner Hydraulic Jacks.

This super-powerful, easy-operating line of hydraulic jacks comes in 3, 5, 8, 12, 20 and 30 tons capacity. Quick delivery can be made on orders carrying priority rating. For details consult your industrial supply distributor — or write us.

HEIN-WERNER MOTOR PARTS CORP.
Waukesha, Wisconsin

HEIN-WERNER HYDRAULIC JACKS
Are Built Right and Priced Right

▲ Mention Item **NED-6390** when writing ▲

NEW TYPE REMOVABLE STICKERS

DOUGLAS AIRCRAFT FINDS THEM—
—faster to use . . . quicker to apply
. . . easy to remove

Kum-Kleen stickers, with the magic adhesive backing, are applied without moistening, adhere to any smooth surface including metal, glass, plastic, and wood . . . never fall off . . . yet are easily peeled off when their job is done.

Try them as Inspection, Rejection, and Identification stickers.

Write today for samples and the booklet explaining their wide use in war industries.

Kum-Kleen Removable Stickers

AVERY ADHESIVES, Dept. NE 12, 451 E. Third St., Los Angeles, Calif.
In Canada, Enterprise Sales & Distributors, Toronto

▲ Mention Item **NED-6391** when writing ▲

RELIANCE V*S DRIVE

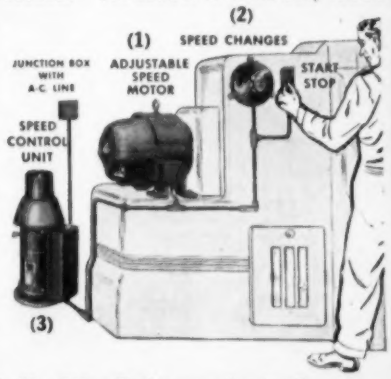
AN ALL-ELECTRIC ADJUSTABLE-SPEED DRIVE for A-C. CIRCUITS
Speed Ranges up to 16 to 1
Sizes—1 to 30 hp.

1. DIRECT DRIVE. You need fewer parts (no intermediate speed-adjusting device) and less space. Streamline your machine design. Get your power closer to where your power is needed.

2. SPEED CONTROL CONVENIENCE WITHOUT LIMITATIONS. Start-stop button and speed-changer go at any handy point to which you can run a wire. . . . Control is within easy reach.

3. FROM A. C. POWER SUPPLY. You enjoy many advantages at a new low price due to the "packaged" V*S Speed Control Unit. Mount it anywhere. Connect it by three wires to a 3-phase a-c. circuit.

Other production aids: Quick stopping, reversing, speed-setting, safe speeds for threading, ample starting torque with smooth acceleration.



Reliance Bulletin No. 310 will give you the details

RELIANCE ELECTRIC & ENGINEERING CO.
1088 IVANHOE ROAD · CLEVELAND, OHIO
Sales Offices in Principal Cities

▲ Mention Item **NED-6392** when writing ▲

The Angle Computer
A MASTER OF ACCURACY

TIME-SAVING

LABOR-SAVING

Any Angle Easily and Quickly Obtained or Checked

The ANGLE COMPUTER is a time-saving instrument designed to simplify the layout of die work—for machined parts, for castings in the survey stage and for finished precision parts ready for inspection.

It has three individual directions of rotation assembled into one unit. Machinist merely moves surface plate to the desired position and locates easily and quickly the exact position to a thousandth of an inch! Part or casting is clamped to surface plate ONE TIME and every angle or compound angle can be calculated and checked. The ANGLE COMPUTER is accurate, guaranteed against defects, rigid and sturdy in construction. Two sizes surface plate — one 4½" x 9", the other 9" x 16".

It will increase the production of precision work and save hours of labor. Write NOW for complete information, to—

The ANGLE COMPUTER CO.
5720 Melrose Avenue Los Angeles, California

▲ Mention Item NED-6396 when writing ▲

INDUSTRY KEEPS FIT *ELECTRICALLY* WITH WESTONS

Industry's production figures bear testimony to the outstanding contribution plant maintenance men are making to war plant efficiency. Despite obstacles such as materials' scarcities and limited manpower, electrical equipment — old and new — is being kept constantly fit for full-scale output.

As part of the efficient maintenance combat team, WESTON test instruments play an important role. For in addition to their *trustworthy indications*, they also provide features which greatly simplify preventative maintenance procedure. *In less time—at far lower cost*—electrical equipment is being kept *fit* with dependable WESTONS. Weston Electrical Instrument Corporation, 663 Frelinghuysen Avenue, Newark, New Jersey.

WESTON *Instruments*

▲ Mention Item NED-6397 when writing ▲

QUICKER... EASIER... CLEANER
GANG STAMPING

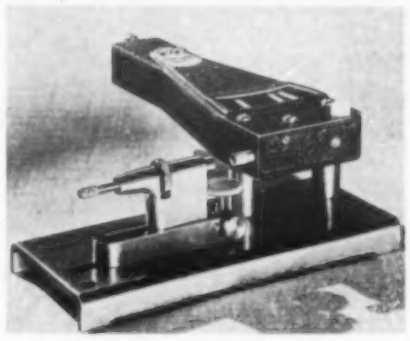
THUMB PRESSURE CLIP PERMITS QUICK CHANGING OF TYPE

This HERCULES HOLDER marks tool steel, castings, half hard brass, stainless and Monel Metal. A blow with a heavy hammer and the mark is made. Type, available for any number or letter combination, is especially designed with extra body for added strength under continuous impact. All sizes of this ACROMARK product are available. When ordering, give size and maximum number of characters needed for single stamping. Literature on request.

ACROMARK
THE ACROMARK CORPORATION
7-11 MORRELL STREET, ELIZABETH, NEW JERSEY

▲ Mention Item NED-6398 when writing ▲

PRECISION INSPECTION GAGE



Designed to meet vast number of precision inspection requirements on parts, this Micro-Chek gage has built-in indicators to copy the range of tolerance from master parts. Dimensions are multiplied accurately by as much as 200 times.

Device is simple mechanism of levers which multiply dimensions and operation is under control of push button. It is comparator type gage which is set through use of two master parts, one having limit of dimensional tolerance on high side and other having limit of dimensional tolerance on low side.

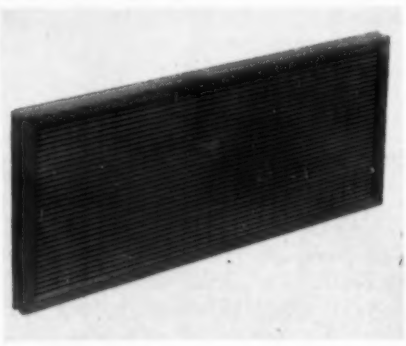
Two limit fingers are set so that production parts may be compared to master parts. Pieces are checked for "go" and "no-go" limits simultaneously. After using this inspection device in over one hundred applications in plant, manufacturer decided to make instrument available to other industries.

Illustration shows unit mounted on universal base, fitted with adjustable anvil. Users of instrument on production runs may build their own anvils to be mounted in place of adjustable anvil, latter being offered as accessory equipment. Also available are thread gaging anvil and standard tips for various thread sizes.

Instrument is light in weight and entirely self-contained. Fixtures and anvils for holding parts to be checked can be made by ordinary mechanics. Device is self-compensating for wear on engagement fingers and elsewhere. List price of Micro-Chek with base plate is $9.75. Adjustable anvil with set of general purpose gaging tips lists for $3.00. Made by **Trico Products Corp.**, 817 Washington St., Buffalo, N. Y.

▲ Mention Item NED-6399 when writing ▲

VENTILATING GRILLES



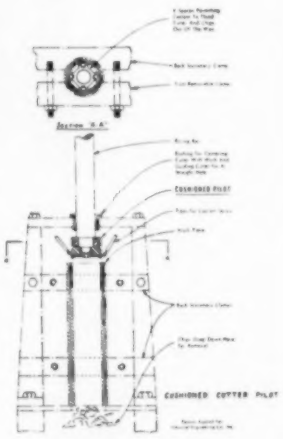
So designed that it is impossible to see through it at any angle, this Uni-Flo Sight-Tight ventilating grille may be applied for ventilating openings in doors, walls, panels, baseboard and other locations. Fins are of inverted V shape and overlap. Diffusers on edges of fins add rigidity to assembly and afford pleasing appearance.

Unit may also be used for exterior fresh air intake openings, because of fact that design provides effective barrier against entrance of rain or snow. Standard sizes range up to and including 36 by 36 inches. Larger sizes can be prefabricated in two or more sections and assembled into common frame. Made by **Barber-Colman Co.**, 230 Loomis St., Rockford, Ill.

▲ Mention Item NED-6400 when writing ▲

BORING CUTTER PILOT

This cushioned cutter pilot is claimed to reduce breakage of carbide tools, especially in deep hole boring as cutter advances into work and away from main support. Because a long bar must be used in deep boring, its diameter varies in proportion to length of bar and sets up resiliency in direct proportion to cause radial variations in bar when under working load. Cutter would also be forced out of alignment with true center of hole by excessive stock.



Cutter pilot affords rigid set up and makes it possible to use boring bar almost as large as hole being bored. Sketch shows pilot in place as it would be used. Cutter is at end of boring bar with cushioned pilot directly back of it and with bar at its highest position. Work to be machined is clamped in place as indicated.

At point directly back of pilot, bar is supported by bushing in fixture attached to machine. This guides bar and cutter as it progresses into work. Cutter will operate on any single tool, as well as any number of tools in cutter. Pilot can be made to suit existing conditions for new bars, or old bars can be turned down to accommodate pilot. Made by **Industrial Engineering Co.**, P. O. Box 433, 311 Sixth Ave. S., Minneapolis, Minn.

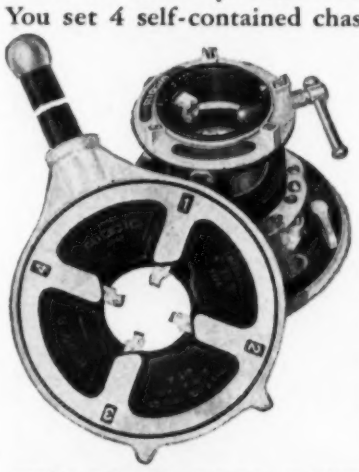
▲ Mention Item NED-6401 when writing ▲

Downs Safety Plate Grips

▲ Mention Item NED-6402 when writing ▲

BETTER THREADS *more easily... quickly...* with this remarkable work-saver RIGID No. 65R

Modern designing gives you this fighting tool for the battle against delays, expense and overwork. . . . You set the workholder with a turn of the cam plate that clicks instantly to size—only one screw to tighten. You set 4 self-contained chasers (instead of 16) to size in 10 seconds, to thread either 1", 1¼", 1½" or 2" pipe — and you cut smooth perfect threads with an easy floating action; your little finger can do it. Durable? This 65R is made of rugged steel and malleable, the chaser dies of long wearing high speed steel. Ask for it at your Supply House.



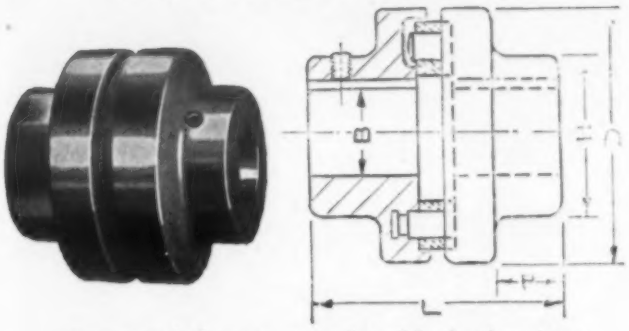
THE RIDGE TOOL COMPANY, ELYRIA, OHIO

RIGID
Pipe Wrenches, Cutters, Threaders, Vises
Work-Saver Tools for America's Big Job in 1942

▲ Mention Item NED-6403 when writing ▲

FLEXIBLE COUPLING

Simple . . . Silent . . . Inexpensive



Two metal flanges, a replaceable leather insert and steel-inserted driving lugs make this simple, silent, inexpensive coupling. It is ideal for good operating conditions, light loads and even torques, such as centrifugal pumps, light fans, small speed reducers (high speed end) and other light duty work.

Sizes for ¼ to 25 H.P. at standard speeds, ½ to 4 H.P. at 100 R.P.M. Shaft bores, ¼" to 2¼". Our technical staff will gladly recommend applications. If your present coupling performance or price is not satisfactory, write us.

Catalog 140 provides data on couplings, sheaves, variable speed sheaves and pulleys.

CONGRESS TOOL & DIE DIVISION
3752 East Outer Drive Detroit, Michigan

▲ Mention Item **NED-6404** when writing ▲

Ask any of the millions of RIDGID Pipe Wrench users —they'll tell you these tools are practically never out of service . . . no lay-up for housing repairs, no expense, no delays. And so much easier to use. Quick-gripping sure-grip chrome molybdenum jaws, heel-jaw replaceable, hook-jaw with handy pipe scale. Adjusting nut in open housing spins easily to size. Strong I-beam handle, easy to the hand. Sizes 6" to 60". At your Supply House.

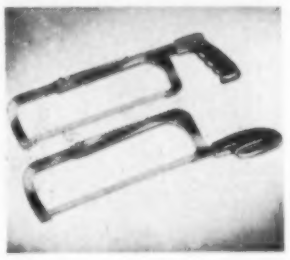
RIDGID is made also in End Pattern, 6" to 36", for pipe against flat surfaces, in tight places.

THE RIDGE TOOL COMPANY, ELYRIA, OHIO

RIDGID
Pipe Wrenches, Cutters, Threaders, Vises
Work-Saver Tools for America's Big Job in 1942

▲ Mention Item **NED-6405** when writing ▲

HACK SAW FRAME



Cam-action lever-lock sets up and releases blade in this Star hack saw frame. Loose blade studs and threaded tension devices have been eliminated, permitting positioning of blades in fraction of time required with frames of conventional design, according to the manufacturer.

Straight cuts and minimum blade breakage result from high tension which this frame applies to blade. High tension is possible because frame is made of heat treated spring steel. Gun metal finish assures high resistance to rust and other forms of corrosion.

Handle may be either straight in model No. 30 or pistol grip in model No. 20. It is molded of heat resistant, non-conducting Tenite. Frame may be adjusted for 8, 10 or 12-inch blades by pulling out single pivot pin to open position, sliding frame forearm to desired length, and snapping pin back into place. Blade may be positioned to face in any of four directions by placing it over either of two sets of fixed pins which are integral with frame.

Each frame is sold complete with Star blade, individually packed in metal reinforced cardboard box. Included is chart carrying instructions, as well as hints on proper selection and use of blades and frames. Made by **Clemson Bros., Inc.**, Middletown, N. Y.

▲ Mention Item **NED-6406** when writing ▲

SPOT WELD TESTER

Permitting checking of strength of spot-welded samples on-the-job or in a plant, this spot weld testing machine is designed for use in production line testing of light metal fabrications. Equipment is self-contained, being motor-driven machine which is extremely rapid and simple to operate.

Self-aligning lever-operated open face grips have renewable hard file faces. Grips accommodate offsets in welded specimens which may range from thinnest gage to ¼-inch thick. Top and bottom handling levers are set at right angles to permit convenient operation. Hand moving of machine is facilitated by low center of gravity and 18-inch diameter base. Hoisting hook mounted on top is used for handling machine with crane.

Precision dial, 8 inches in diameter, at top of unit indicates load. Cylinders having 2-inch stroke are also set in top section. Machine has overall height of 70 inches and weighs approximately 800 pounds. Made by **The Baldwin Southwark Div.**, The Baldwin Locomotive Works, 942 Chester Pike, Eddystone, Pa.

▲ Mention Item **NED-6407** when writing ▲

INDUSTRIAL SEARCHLIGHT

Particularly suited for protective lighting at ordnance plants, industrial plants, bridges, storage yards and public utilities, as well as for patrol lighting needs, this incandescent search light features dustproof and weather-tight construction. Multiplicity of mounting arrangements is available to meet practically any condition. Control may be by hand or of pilot house type. Models include 12 and 18-inch lenses.

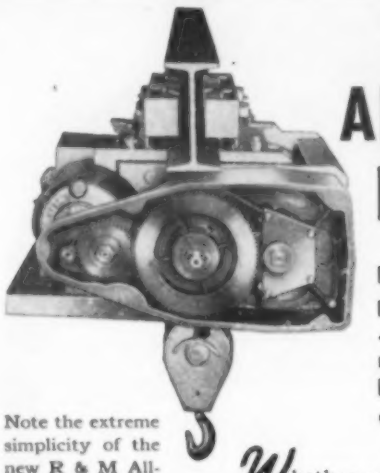
Beam of high candlepower is produced by precision ground, polished, silvered glass reflector, supplemented by polished metal secondary reflector. Units are designed for continuous operation with 1500-watt lamps in 18-inch size and up to 600-watt lamps in 12-inch size. Wattages of 2000 and 1000 can be used in 18 and 12-inch sizes respectively if used intermittently.

Standard socket equipment is for mogul prefocus base lamps. Mogul screw or bi-post types can be furnished to specification. Housing is of sheet metal, so designed as to form rigid, strong enclosure. Finish is of heat and corrosion resisting paint. Housing is supported in steel yoke attached to mounting base.

When used in pilot house, unit is equipped with friction clutch and rotation stop. Elevating quadrant is furnished with degree markings for setting at any predetermined angle. Made by **Revere Electric Mfg. Co.**, 2946 N. Paulina St., Chicago, Illinois.

▲ Mention Item **NED-6408** when writing ▲

R & M ALL-STEEL HOISTS



New design . . . simplified mechanism . . . for lower headroom, faster load handling, and greater operating economy!

Note the extreme simplicity of the new R & M All-Steel hoist shown above, with cover removed. There are no useless "gadgets" to cause trouble and reduce efficiency. All mechanism can be easily withdrawn.

★

Whether your material handling requires moving 1,000 pounds or 15,000 pounds, there's an R & M all-steel hoist that will do the job better. Get complete facts on the R & M line of all-steel hoists, including R & M's newest all-steel, low-headroom "production speeder" and "space saver."

Write now for Folders No. 800 and 801-NED. It will pay you to "take it up" with R & M—today.

ROBBINS & MYERS, INC.
HOIST & CRANE DIVISION, SPRINGFIELD, OHIO

▲ Mention Item **NED-6409** when writing ▲

USE CHALLENGE Semi-Steel LAPPING PLATES

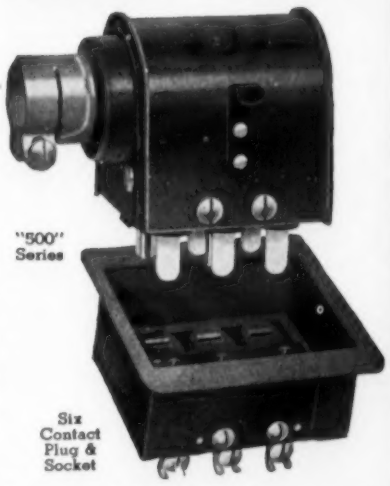
for Accurate Lapping of Joints Required to Hold Oil

● **These plates are specifically designed to assure a perfect fit when lapping metal-to-metal joints on which no sealer of any kind is used. Made of finest semi-steel, specially heat-treated and carefully machined, these plates have 1/16-inch grooves, ½-inch apart, running the full length and width of the surface. Sizes range from 8x8 inches up to 54x72 inches inclusive. Available with or without all-steel, arc-welded stand, equipped with lock leveling screws to keep the plate absolutely level. Write now for prices and full details on Challenge Semi-Steel Lapping Plates.** 414

THE CHALLENGE MACHINERY CO.
GRAND HAVEN, MICHIGAN

▲ Mention Item **NED-6410** when writing ▲

JONES HEAVY DUTY PLUGS AND SOCKETS



Designed for 5000 volts and 25 amperes per contact. Fulfills every electrical and mechanical requirement. Polarized to prevent incorrect connections.

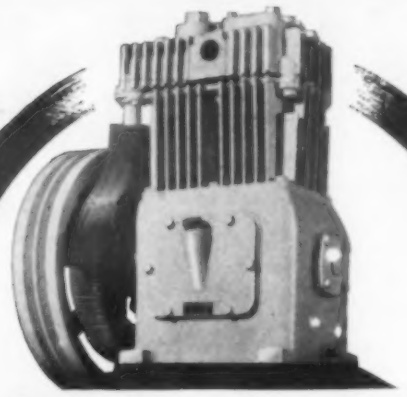
Plug and socket bodies of molded bakelite. Plug contacts of hard brass, silver plated. Socket contacts of phosphor bronze, silver plated.

Terminals numbered to facilitate correct and rapid wiring. Plug and socket bodies are interchangeable in caps and brackets. Furnished in 2, 4, 6, 8, 10, and 12 contact.

Write today for Bulletin No. 500.

HOWARD B. JONES
2304 WABANSIA AVE., CHICAGO

▲ Mention Item **NED-6411** when writing ▲



1st in design

TOPS IN EFFICIENCY

QUINCY was *first* to design and build an air compressor that combined modern appearance with improved mechanical features. Construction is simpler. Radiation area is increased 12%. Lubrication is more thorough—more positive. The policy of building air compressors *exclusively* has helped to make the name "Quincy" a symbol for dependability and efficiency. *If you have compressed air problems, let us help you solve them!* QUINCY COMPRESSOR CO., Dept. 8122, Quincy, Illinois.

Quincy COMPRESSORS

▲ Mention Item NED-6412 when writing ▲

HOLES and CRACKS in Concrete Floors

quickly, securely repaired with

SMOOTH-ON No. 7B QUICK PATCH

Smooth-On No. 7B Quick Patch is sold in 1-lb., 5-lb. cans, 25-lb., 100-lb. kegs. Full information and prices on request.

Look out for the narrow cracks, small holes and shallow ruts in your concrete floors. They quickly deepen and enlarge from continued traffic and then cause accidents and become more costly to repair.

With SMOOTH-ON No. 7B QUICK PATCH, you can repair concrete floors without loss of production time, because SMOOTH-ON hardens over night. SMOOTH-ON patches are easily applied, become iron-hard, and do not loosen, because they expand against confining surfaces.

FREE

The 40-page Smooth-On Handbook which describes dozens of other practical and helpful applications of the various Smooth-On compositions for building and equipment repairs. Your copy sent free on request.

SMOOTH-ON MFG. COMPANY
Dept. 10, 570 Communipaw Avenue
JERSEY CITY, N. J.

Do it with SMOOTH-ON

▲ Mention Item NED-6413 when writing ▲

NOW IT'S AVAILABLE AS A 150-TON UNIT!

HydrOILic Press DLSC2-150
for 15 to 150-ton Straightening and Assembly Work

Industry's gathering war-production drive called for added power in this time-proven, oil-hydraulic press. . . . It is now ready for priority holders in 150-ton capacity.

Exact tonnage required for each task is obtained without adjustments . . . because ram movement and pressure are both precision-controlled by hand-lever or foot-pedal. (Yet, stroke and pressure limits can be set, if desired). Release of control lever returns ram to full-daylight, or pre-set, opening at once . . . and positive locking prevents "drift." DLSC2-150 is a fully-enclosed, self-contained press, in streamlined frame, with ample toe-space. Also available in 25, 50, and 100-ton units. Maximum stroke—12 inches. Maximum vertical opening—42 inches. Write for complete information.

THE DENISON ENGINEERING COMPANY
1151 DUBLIN ROAD COLUMBUS, OHIO

DENISON EQUIPMENT in APPLIED HydrOILics

▲ Mention Item NED-6414 when writing ▲

PARKERIZING MACHINE

Eliminating all manual labor in putting work through complete process for surface treatment of metal, this continuous parkerizing machine is fully automatic in operation. Work is

progressively passed through parkerizing, rinsing, chromic acid rinsing, blow-off, oil dipping and drying operations.

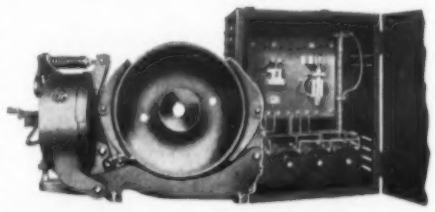
Drum is so constructed that it holds level of liquids to within approximately 3 inches of center, insuring complete immersion of work. This design also permits continuous circulation of parkerizing solution without agitation between drum and heating tank. This maintains constant temperature of liquid in drum.

Machine can be arranged for steam or gas heating. Made by **N. Ransohoff, Inc.**, 400 Seventy-first St., Cincinnati, O.

▲ Mention Item NED-6415 when writing ▲

MAGNETIC BRAKES

Designed for operation on squirrel cage and wound rotor motors, this line of type WB high speed, shunt wound, magnetic brakes is applicable to cranes, hoists and mill machinery. Application of magnetic brakes for alternating current service is made possible by addition of compact rectifier unit.



Advantages claimed for these units include elimination of hammer-blow, chatter, laminated magnets and coil burnouts. Brakes are spring set and magnetically released. Equipment may be used with any magnetic or manual control.

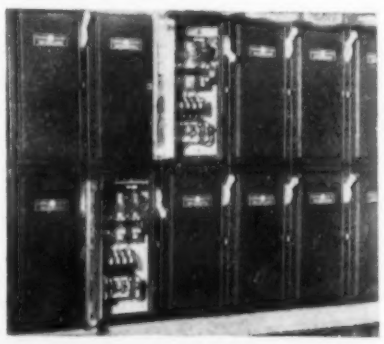
Standard designs for alternating current applications include proper size of brake with Ecamite wheel for floor mounting, copper oxide rectifier, double break contactor, and current reducing, adjustable resistor and relay. Fast operation is obtained by high releasing current, holding current being reduced by brake relay as soon as brake opens.

Since brakes release and set quickly, it is possible to obtain accurate inching on cranes, hoists, bridges, turntables, conveyors and rotating machinery. Thick molded brake blocks are used. Made by **The Electric Controller & Mfg. Co.**, 2694 E. Seventy-ninth St., Cleveland, O.

▲ Mention Item NED-6416 when writing ▲

MAGNETIC STARTER

Full-voltage starting of induction motors up to 7½ horsepower can be obtained with this line of alternating current combination magnetic starters. Available only in NEMA sizes 0 and 1 as yet, these controls consist of fusible motor-circuit switch and magnetic starter incorporated into single compact unit to conserve space and installation time, to protect equipment and operators, and to improve appearance. To facilitate mounting of groups of starters close together, operating handle is projected through front rather than side of case.



Motor circuit switch has silver-surfaced, snap-action contacts of roller type which easily break stalled motor current. Vystipe fuse clips hold fuses securely in place by means of screw fasteners at each end, assuring good contact and preventing fuses from being displaced. Units are also available with thermal circuit breakers in place of fusible switches.

Bimetallic overload relays are adjustable for either hand or automatic reset and protect motor from overheating caused by repeated overloads, sustained overloads or too frequent starting. All terminals are of clamp type, front-connected. Double-break contact tips are silver inlaid and of self-cleaning type.

Starters are enclosed in general purpose, cabinet type, welded steel cases. Flush type doors of cases close into deep L-shaped flanges, providing tight joint between case and cover. Interlock prevents opening of door until switch is in "off" position. Assemblies are completely wired, ready to connect to equipment. Made by **General Electric Co.**, Schenectady, N. Y.

▲ Mention Item NED-6417 when writing ▲

Makes Uneven Teeth PERFECT! and keeps them Perfect

AUTOMATICALLY JOINTS AS IT FILES
After each file stroke (See circle illustration above) the feed pawl which moves the saw goes under the file and into the "V" or gullet *already filed and straightened up.* This action quickly corrects uneven teeth, makes them perfect in size, shape, spacing—and keeps them perfect. The Foley Filer is the only machine which files band saws, cross-cut circular saws, and hand saws. It increases sawing production 25% to 40%. Reduces filing costs and saw breakage.

FOLEY AUTOMATIC SAW FILER

FILING SAWS FOR VICTORY

The Foley Filer is in use by U. S. Navy for shipyards, air bases, battle-ships, navy tenders—by U. S. Army posts and airports—by U. S. Engineers—also hundreds of War and industrial plants. THOUSANDS IN USE. The Foley Saw Filer has proven its value and quality by many years of use on thousands of machines in service. Write direct to us for literature and prices.

FOLEY MFG. CO., 23 Main Street, N. E., Minneapolis, Minn.

▲ Mention Item NED-6418 when writing ▲

Guard Against DERMATITIS

USE

STASAFE FABRIC

SAFETY GARMENTS

Flexible, Lightweight Protection Against OILS ACIDS SOLVENTS PAINTS TARS ★

Long Lasting Waterproof Resistant To FLAME CREOSOTE VARNISH CAUSTICS ★

APRONS, JUMPERS, LEGGINGS, SLEEVES, BIBS, SPATS, etc., made from Stasafe fabric, are approximately one half the weight of rubber coated garments. Workers are enthusiastic over the new freedom of movement offered by this remarkable material and are more willing to wear garments made from it. Because of its original lower cost and longer life, Stasafe fabric will pay you dividends not only in original saving and greater wear, but in many cases through increased production efficiency as well.

WRITE FOR DETAILS AND PRICES

ECONOMY SKIN SHIELD

To combat Dermatitis and prevent the skin from coming in contact with irritating substances.

GERMS will live in oils and solvents. An application of Economy Skin Shield before work will prevent their contact with the worker's skin and discourage Infection or Dermatitis. Harsh, skin drying solvents are not necessary for cleaning up if you use Economy Skin Shield.

FREE SAMPLE ON REQUEST

Dispenser type bottle furnished free with each gallon. A gallon contains over a thousand average applications.

STANDARD SAFETY EQUIPMENT COMPANY
232 W. Ontario St. Chicago, Ill.

▲ Mention Item NED-6419 when writing ▲

Dust, Soot, Smoke

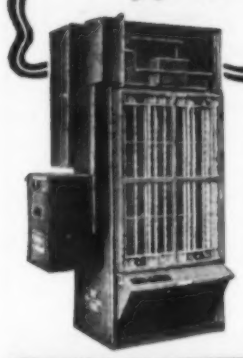
EVEN Oil Vapors and Welding Fumes

PRACTICALLY VANISH WHEN THE AMERICAN

ELECTRO-MATIC

SELF CLEANING ELECTRIC PRECIPITATOR

is on the job



Electrical precipitation—long recognized as the most efficient method of collecting smoke, soot, and fine dust particles—is combined in the AAF Electro-Matic with the automatic self-cleaning viscous impingement filter to provide the most efficient air cleaning ever offered. Send for Bulletin No. 250D. Address 391 Central Avenue.

AAF

AMERICAN AIR FILTER CO. INC.
INCORPORATED
LOUISVILLE, KENTUCKY

▲ Mention Item NED-6420 when writing ▲

PROTECTION OVER LAND AND SEA

GENERAL HEAVY-DUTY BOXES

For the discomfort of the enemy, vital products must travel great distances in a global war. Consequently, they must be shipped in containers that are able to withstand rough handling and severe weather conditions.

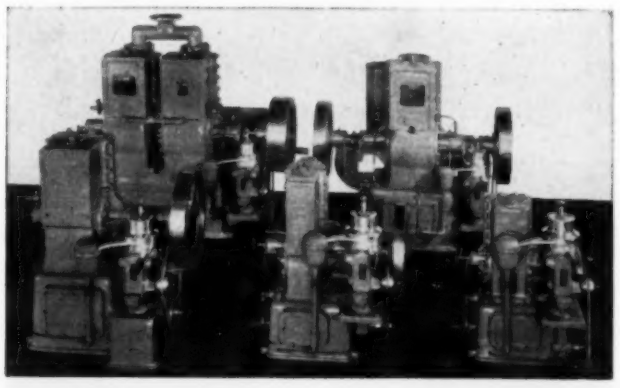
General Heavy-Duty Wirebound boxes are helping to get war products to the armed forces or war production assembly lines faster. Assembled and closed quickly, easy to handle, they conserve vital man-hours. Valuable space, too, is saved in trucks, trains, ships and on the shipping room floor.

Here preparations are made for the overseas journey of a Diesel motor crank shaft. The package is designed to comply with Ordnance specifications.

General Box engineers are widely experienced in aiding shippers to meet various government packing specifications. Perhaps they can help you with your shipping problems. Write for full details.

GENERAL BOX COMPANY
General Offices: Corner of Dearborn and Illinois Streets, Chicago, Ill.
District Offices and Plants: Brooklyn, Cincinnati, Detroit, East St. Louis, Kansas City, Louisville, Milwaukee, New Orleans, Sheboygan, Winchendon, Continental Box Company, Inc.: Houston, Dallas

▲ Mention Item NED-6421 when writing ▲



STOKES *High Vacuum* PUMPS

- for use in processing heat-sensitive chemicals, foods, etc.
- reducing oxidation in drying metals or chemicals
- more rapid drying at lower temperatures
- more efficient drying and impregnating

Stokes Pumps provide the higher vacuum needed for modern, efficient processing operations. They draw and maintain, economically, vacuum within a fraction of a millimeter of absolute. They are simple, with only three internal moving parts; exceptionally rugged; oil-sealed; require little power and only a minimum of maintenance. Capacities from 10 cu. ft. to 225 cu. ft. Catalog on request. Ask also for bulletin in new model Stokes Portable High Vacuum Gauges.

F. J. STOKES MACHINE COMPANY
5964 Tabor Road Olney P. O. Philadelphia, Pa.

F.J.Stokes FJS Est 1895

▲ Mention Item NED-6422 when writing ▲

INSPECTION MAGNIFIER

Combining magnification with shadow-free fluorescent lighting, this Flud-Lite magnifier is available in two styles. Model No. 701 for bench work, use on conveyor belts or on machines has steel base, two adjustable friction joint arms and 6 feet of approved cable with ballast plug. Base can be removed for permanent anchorage of unit to machine or equipment.

Model No. 701H has comfortable hardwood handle and is intended for portable inspection anywhere in plant. Both units have focused fluorescent daylight lamps which distribute light over work without shadows. Five-inch lens, with focal length of 13 inches, provides full magnified vision. Rotary light switch is mounted in frame.

Such operations as small parts assembly, finding cracks and flaws, and inspection of tools are facilitated with unit. Device may also be used for map making and reading, instrument manufacture, engraving, fingerprint inspection and other work where magnification is required.

Both models operate only on 110-120-volt, 60-cycle alternating current. List price of bench model is $24.50 and of portable model, $22.50. Made by **Stanley Electric Tool Div.**, The Stanley Works, 104 Elm St., New Britain, Conn.

▲ Mention Item NED-6423 when writing ▲

DUST RESPIRATOR

To save metal for essential war production, this Comfo dust respirator has been redesigned, employing filter cases molded of black plastic. This unit is approved by U. S. Bureau of Mines. New construction is claimed to improve unit's appearance and to provide minimum of resistance to breathing or air flow. Filter container units are thinner than in previous models and have round edges which permit better sidewise and downward vision.

Plastic filter cases have high impact strength and are nonconductors of electricity. They are not affected by perspiration. Respirators afford both safety and comfort in dust protection. Twin, side mounted replaceable filters have large filtering area. Unit is easy to clean and maintain. Types are available to meet various dust and mist conditions. Made by **Mine Safety Appliances Co.**, 220 N. Braddock Ave., Pittsburgh, Pa.

▲ Mention Item NED-6424 when writing ▲

COWL FASTENER

Built to withstand unusually high shear and tension loads, this cowl fastener may be locked and unlocked instantly. It is stated that unit has been approved for use on Army Air

Force airplanes. Test reports of -7 series fasteners show that they will withstand ultimate tension load of 1600 pounds average, or approximately 50 per cent greater than AN specifications. Ultimate shear loads average 2700 pounds, or approximately 250 per cent in excess of AN specifications.

Locking and unlocking is by means of screw action which produces any desired amount of tension to hold sheets together. Adjustment feature permits accommodation of wide variance in sheet thicknesses for each given size of unit. As a result, fewer stock sizes are needed to meet all standard requirements. Indicator on face shows exact position of locking member of stud.

Series -7 are now in production and manufacturer is tooling up for making -5 series. Samples, installation drawings and engineering data will be sent upon request to firms engaged in war effort. Made by **Nigg Engineering Co.**, Covina, Calif.

▲ Mention Item NED-6425 when writing ▲

Use This Handy UNIVERSAL TABLE

for General, All Around Small Tool and Instrument Work

$149.60 Complete, as shown. SPECIFY TABLE 204-1.

Here is a handy Universal Table for the machining of small parts, particularly adaptable to small high-speed milling machine or engraving machine work. A time saver on instruments and fine tools.

Work table is 6" diam., graduated to 360°; has four 3/8" T-slots milled from solid. Is revolved by hand and clamped in position by lever. Has 1/2" diam. center hole for centering work, and bottom of hole is tapped 1/2" N. C. for holding down work with screw or draw-bar. Overall height (horizontal position) 3 7/8". Four 1/4" N. C. tapped holes in table top.

CAN BE SET AT ANY ANGLE
Swivel graduated through 90°. Table can be set at any angle from vertical to horizontal, and revolved while in these positions.

FREE Write for Gorton Accessories Catalog giving full additional information on this and other handy Gorton Accessories.

GEORGE GORTON MACHINE CO.
1103 13TH STREET, RACINE, WISCONSIN, U. S. A.

▲ Mention Item NED-6426 when writing ▲

SUBSTITUTE WOOD WHEN YOU CAN, BUT...

HERE ARE 2 CASES WHERE STEEL IS A MUST

1 When you're handling hot forgings, castings, and heat-treated materials; and

2 When you're storing materials in tiers weighing 5000 lbs. or more.

UNION METAL all-steel skid platforms and boxes provide the necessary strength and durability for these operations—insure speed *with safety*. Available in a size and type to meet every requirement. Write for your copy of catalog describing complete line.

THE UNION METAL MANUFACTURING CO. Canton, Ohio

▲ Mention Item NED-6427 when writing ▲

Simplified TURRET LATHE

for Quick Training of New Workers

OSTER No. 601 TURRET LATHE

Manual control of the six-position turret and other simplified features of design and operation recommend this modern, motor driven lathe for quick training of new or semi-skilled workers.

Many war production plants are using the Oster No. 601 on a wide range of small diameter work requiring high standards of accuracy and speed.

The machine is furnished with either the six-position turret, or with plain saddle, as desired. Two types of drive are optional: DIRECT drive and WORM drive, depending upon range of spindle speeds required. Write for Catalog 27-A.

OSTER THE OSTER MFG. CO.
2066 E. 61st St., Cleveland, Ohio, U. S. A.

▲ Mention Item NED-6428 when writing ▲

METAL CASTINGS rejected for porosity—even those with small blow holes and similar foundry imperfections—need no longer be scrapped. Reclamation is simple—low in cost—with BAKELITE Sealing Solution.

First, the casting is thoroughly cleaned, and BAKELITE Sealing Solution forced into the metal pores under pressure. Pressure is held for 2 to 30 minutes, depending upon wall thickness and degree of porosity. The impregnated casting is then baked for a short period.

Baking causes the sealing solution to harden and bond to the metal—forming a permanently insoluble and infusible seal which is unaffected by hot or cold water, steam, oils, chemicals, or by heat up to 400 deg. F.

Bakelite Engineers will gladly assist you in adapting this new salvage procedure to your present setup—for castings of aluminum, iron, nickel, silver, bronze, and brass. For full particulars, and details on application procedure, write for Booklet.

BAKELITE CORPORATION
Unit of Union Carbide and Carbon Corporation
UCC
30 East 42nd Street, New York

BAKELITE
Sealing Solutions

▲ Mention Item NED-6432 when writing ▲

Prompt Deliveries of
ACCURATE
Sheet Metal Work

SPARE PART BOXES
under Government Specifications

Carefully and rapidly produced in Stackbin's modern plant, Stackbin-made spare parts boxes are meeting Navy requirements and are in use on Navy ships.

Stackbin offers you unusual facilities to fabricate these boxes and other sheet metal products

Behind these special products stand the designing experience and production facilities of a leading maker of parts and materials handling equipment. You can take advantage of their knowledge of sheet metal fabrication. Write Stackbin Corp., 71 Troy St., Providence, R. I., to find out what they can do for you.

STACKBIN SYSTEM
"Stacked and Still Accessible"
STACKBIN CORP., Providence, R. I.

▲ Mention Item NED-6433 when writing ▲

A Permanent type of FLASHLIGHT BATTERY
Refer This To Your HEAD WATCHMAN
RECHARGE IT ANYWHERE

Simply recharge from any electrical outlet and you always have a "fresh" battery!

HAVE POWERFUL BRIGHT LIGHT ALWAYS!

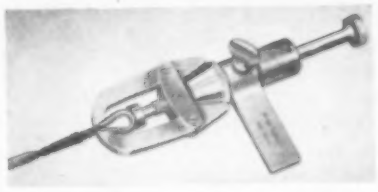
Save trouble and cost of constant replacement of burned-out dry cells. Use IDEAL *Rechargeable* Storage Batteries. With proper care, one IDEAL Storage Battery can give up to 1000 hours or more of dependable bright light. Fits standard 2-cell 1¼" size D case. Reduces Flashlight Battery costs *as much as* 75%.

THOUSANDS IN USE! . . . GUARANTEED
Write for Bulletin FBB-741

IDEAL STORAGE BATTERY
IDEAL COMMUTATOR DRESSER CO.
1032 Park Avenue Sycamore, Illinois
SALES OFFICES IN ALL PRINCIPAL CITIES

▲ Mention Item NED-6434 when writing ▲

CABLE SPLICING HOLDER

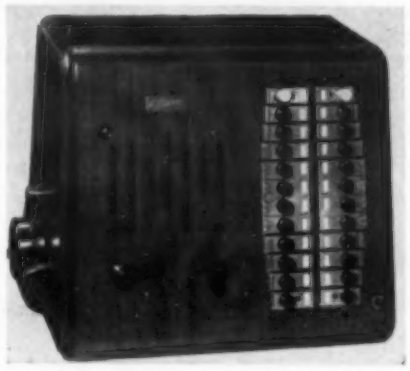


Handling cable sizes ranging from 1/16 to 7/32 inch in diameter, this improved universal quick-adjusting cable splicing holder (*Item NED-650, Feb. 1942*) can be used without adaptors. Thimble or bushing and cable are held in firm position through use of only two adjusting screws. Thimble adjusting screw gives direct contact to self-seating thimble socket. Turning of thumbscrew places splicing holder in either rotating or rigid position, as desired.

This device is designed to assist cable splicing operator in performing more effective and faster work. It is particularly adaptable for use in aircraft and other war industries. Made by **Patrick-McDermott & Co.**, 2704 S. Hill St., Los Angeles, Calif.

▲ Mention Item NED-6435 when writing ▲

COMMUNICATING SYSTEMS



Although this model 2300 intercommunicating station is equipped with call origination buttons for only 22 other stations, it has been engineered for use with as many as 70 other similar units in system. While call origination is thus limited to 22 stations, any given unit can receive calls from and reply to as many other stations as there are in system, depending upon wiring connections. Simple point-to-point wiring and use of junction boxes makes installation easy and relatively inexpensive.

Any two stations may converse with each other, or several may join in private conference through use of conference switch. In 22 station system, up to 11 independent, private conversations may be conducted simultaneously without interference or cross-talk. Either two-way loud speaking or earphone reception is provided. When using earphone it is not necessary to use talk-listen key. Automatic busy signal is standard feature. Each station can control its own incoming loud speaker volume.

Unit is housed in walnut finished cabinet and has Bakelite molded knobs and earphone. Replaceable name tabs identify various station buttons. Equipment operates on 110 to 120 volts alternating or direct current. Made by **Executone, Inc.**, Dept. C, 415 Lexington Ave., New York City.

▲ Mention Item NED-6436 when writing ▲

TOOL & CUTTER GRINDER

Specifically designed for all types of sharpening operations, this model F Sterling universal tool and cutter grinder handles cutters up to 10 inches in diameter on centers and saws or cutters up to 36 inches in diameter when mounted horizontally on table with vertical holder.

Power is furnished to alloy steel tool spindle by totally enclosed, ball bearing ¾-horsepower motor. Base of motor is graduated to register swing of table around machine column, 180 degrees in either direction.

Standard table drive is manual through rack and pinion, with power feed as optional equipment. Longitudinal table travel is 23 inches; cross feed, 8 inches and vertical movement, 8 inches. Maximum distance between centers with work head is 22 inches and swing over table is 10 inches.

Universal work head is of low, balanced type, mounted on horizontal and vertical graduated bases which provide full adjustment. This head is powered by ¼-horsepower, totally enclosed, ball bearing motor through V-belt reduction drive. Standard equipment also includes adjustable steady rest, right hand tailstock, adjustable work driving dog, saw holder with taper shank, 4-inch three jaw universal chuck, five grinding wheels, and wheel truing diamond with holder.

Optional equipment available includes internal grinding attachment which mounts on front edge of wheel head plate and is driven by V-belt from sheave on wheel spindle. Universal vise mounted on graduated horizontal base which is fitted to table has 4½-inch hardened steel jaws which open to maximum of 2½ inches. Horizontal rotation is 360 degrees, graduated 180 degrees in each direction. Tilt is 45 degrees from horizontal. For use where headstock is not required, left hand tailstock is available which affords maximum distance between centers of 26 inches. Made by **McDonough Mfg. Co.**, Eau Claire, Wis.

▲ Mention Item NED-6437 when writing ▲

CERRO ALLOYS
for Prompt Shipment

CERROMATRIX (Melting Temp., 250° F.) For securing punch and die parts, anchoring machine parts without expensive drive fits, for engraving machine models, stripper plates, chucks, short run forming dies and other metal-working applications.

CERROBEND (Melting Temp., 158° F.) Used as a filler in bending thin-walled tubing to small radii. Easily removed in boiling water. Also used for aircraft assembly jigs, templates for forming dies and other purposes.

These two low-temperature-melting and expanding alloys are helping to speed up production of war materials for the Army, Navy and Air Force.

REPRESENTATIVES AND DISTRIBUTORS

BROOKLYN, N. Y. ..... Belmont Smelting & Refining Works
ANSONIA, CONN ..... Jackson Associates
BOSTON, MASS. ..... Jackson Associates
PHILADELPHIA, PA. ..... Machine & Tool Designing Co.
CLEVELAND, OHIO ..... Die Supply Co.
DETROIT, MICH. ..... Castaloy Corporation
CHICAGO, Ill. ..... Sterling Products Co., Inc.
MOLINE, ILL. ..... Sterling Products Co., Inc.
MILWAUKEE, WIS. ..... Harry C. Kettleson, Inc.
ST. LOUIS, MO. ..... Metal Goods Corporation
KANSAS CITY, MO. ..... Metal Goods Corporation
NEW ORLEANS, LA. ..... Metal Goods Corporation
DALLAS, TEX. ..... Metal Goods Corporation
HOUSTON, TEX. ..... Metal Goods Corporation
LOS ANGELES, CAL. ..... Castaloy Corporation
MONTREAL, CAN. ..... Dominion Merchants Ltd.
LONDON, ENG. ..... Mining & Chemical Products, Ltd.

CERRO DE PASCO COPPER CORPORATION
40 WALL STREET NEW YORK, N. Y.

▲ Mention Item NED-6438 when writing ▲

LOW COST — EFFICIENT
Metal Parts CLEANING

STURDY-BILT
"SIMPLEX"
Metal Parts CLEANER

This small, compact, automatic and mechanically simple unit combines the two most positive methods of cleaning Metal Parts, Assemblies, Shells, Cartridges, Castings, Stampings, etc. A swishing action positively removes all grease, oil, dirt and metal chips that have been loosened during the "chemical action" of the "soak". Can be installed in different departments or in a series — one unit for cleaning, another for rinsing or rust prevention coating and others for special requirements. Send for "Simplex" bulletin for complete details.

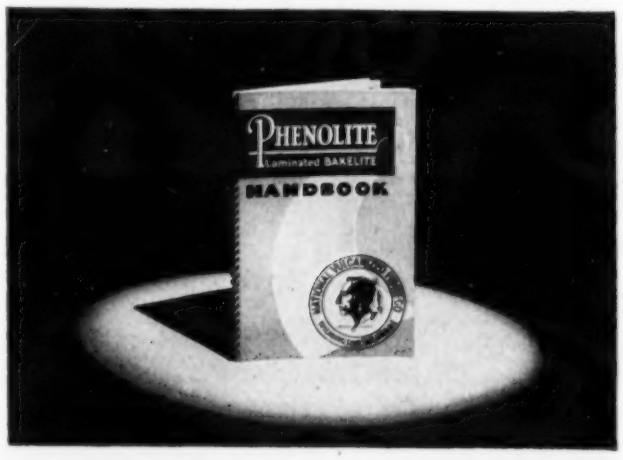
and for
CONTINUOUS
Large Scale
PRODUCTION

. . . the STURDY-BILT "*Soaker-Hydro*" CLEANER

Combines long agitated "soak" with hydro washing action for large production. Parts are loaded onto trays, passed through the soaking tank — then are rinsed to remove oil film and clinging chips — then subjected to a power wash. They are removed dry and ready for use or for the next manufacturing operation. Simplicity is the keynote of construction as well as operation. Send for complete details.

STURDY-BILT EQUIPMENT CORP.
Department N-12 WEST ALLIS, WISCONSIN

▲ Mention Item NED-6439 when writing ▲



Your Free Copy is Ready

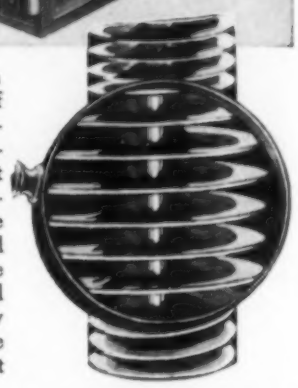
JUST off the Press—the War Time Edition of the Phenolite Handbook is ready for your immediate use. It contains worthwhile technical data and "know how" information valuable to every designer, engineer and purchasing agent. Write today on your Company letterhead for this new Phenolite Handbook.

NATIONAL VULCANIZED FIBRE CO.
Offices in Principal Cities Wilmington, Delaware

▲ Mention Item NED-6440 when writing ▲

AIR CONDITIONING COILS

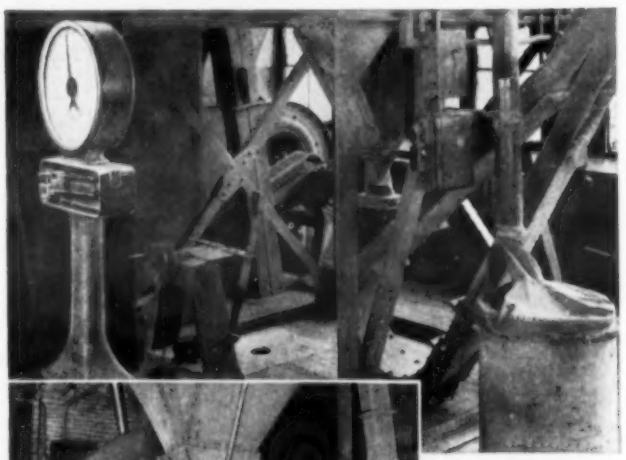
Better built . . . for better service

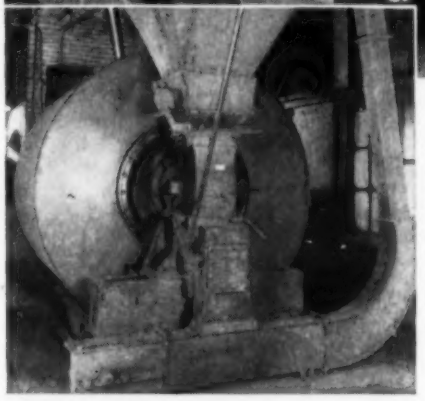


McCordFin Air Conditioning Coils are the result of many years of practical experience in the design and application of heat transfer surface. They have been designed to meet all requirements for a lightweight noncorrodible heat transfer surface. The all-copper tube fin construction with the fins helically wound and metallically bonded provides high heat conductivity for the life of the surface. Fins are smooth copper permitting maximum transfer with low air friction. A bent or formed tube construction permits uniform expansion of the individual tube. Heavy walled copper tube headers have the tubes brazed into the extended ferrules. One or more units may be bolted together or the surface may be fastened to the duct work.

McCord coils are available in three standard widths. Standard coils are available with one or two rows of tubes, and 6, 7, or 8 fins per inch. Specify McCord coils on your next air conditioning blast heating or cooling job. Made by **McCord Radiator & Mfg. Co.**, Detroit, Mich. —Advt.

▲ Mention Item **NED-6441** when writing ▲





Above—Fairbanks Hopper Scale at R.C.A.-Victor's phonograph record plant in Camden, N. J. Powdered composition from which records are manufactured is conveyed from mixer (at left) to hopper of the Fairbanks Scale.

R.C.A.-VICTOR DEPENDS ON FAIRBANKS SCALE IN RECORD MANUFACTURING

Before mixed materials from which records are to be pressed are deposited into storage bins at the phonograph record plant of R.C.A.-Victor in Camden, N. J., they must be carefully weighed. To handle this task, a Fairbanks Hopper Scale was installed as a means of simplifying production and keeping accurate accounting records.

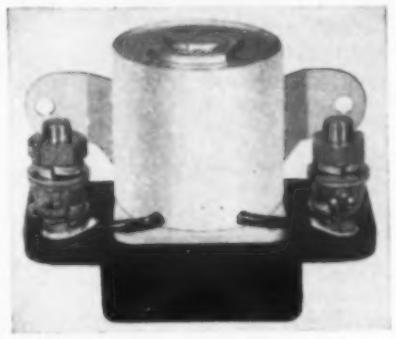
The powdered composition from which new records are pressed is conveyed from a mixing machine on a lower floor to the hopper of the Fairbanks Scale. After the mixed materials are weighed, they are forwarded by elevator conveyors and deposited into one of two storage bins until such time as the composition is needed for processing.

Industry today depends upon Fairbanks Scales to weigh special commodities and to carry out innumerable other specialized weighing operations similar or more complex than the system installed at the R.C.A.-Victor record plant. Other Fairbanks Scales are helping to speed production in industry by counting small parts and products, printing weight records and receipts, weighing and disbursing preset amounts automatically, eliminating possibilities of human errors, and performing countless other often amazing short cuts. For Fairbanks Scales are fast and accurate — no stoppage, no breakdowns, no letdowns . . . **now** or later!

If you are in need of modern weighing equipment, use your priority to get the kind of scales that will serve you best today, during the war, and in the years to come. Fairbanks scale engineers are ready to serve you! Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago.

▲ Mention Item **NED-6442** when writing ▲

SOLENOID CONTACTOR



Built to U. S. Army Air Force specifications for remote control of electrically actuated aircraft instruments, armaments, and devices, this type B-4 solenoid contactor was originally designed for use with airplane starting motors. It is also applicable for other uses requiring heavy current control.

Assembly operates on 24 volts, producing coil current of 300 milliamperes. Contacts are rated at 200 amperes at 24 volts direct current. Contacts are double pole, single throw, normally open type. It is claimed that relay resists acceleration and vibrations of over ten times gravity. It operates in any position.

Unit may be disassembled with pliers and screwdriver. Metal parts are plated to withstand 200 hour salt spray test. Total weight of this device is 31 ounces. Made by **Guardian Electric Mfg. Co.**, Dept. B-4, 1626 W. Walnut St., Chicago, Ill.

▲ Mention Item **NED-6443** when writing ▲

TOOL INSTRUCTION

Developed to expedite the training of new workers in use, care and handling of carbide tools, six educational 35-millimeter slide films have been made available for general distribution. Non-commercial in character, films are self-explanatory and are designed for instructional purposes. They are intended to enable users of carbide tools to increase production, save time, reduce tool costs and tool consumption by proper understanding of all factors relating to their application.

Complete program of visual education comprises six films and copy of each of films reprinted in booklet for reference by trainee following showing of film. Booklet also contains appendix, reference material, charts and other data of value in daily handling and use of carbide tools.

Titles of films are: What is cemented carbide? Designing cemented carbide tools. Brazing cemented carbide tools. Chip breakers and their application. Grinding single pointed carbide tools. Putting cemented carbide tools to work.

Program will be distributed at print cost for use as permanent part of current training programs by industrial concerns and educational institutions. Arrangements are also being made for free loaning of films to educational institutions through film libraries in many states.

Accompanying set of booklets in which films are reproduced is booklet which gives complete instructions for conducting training meetings at which films are to be shown. Program developed and distributed by **Carboloy Co.**, 11163 E. Eight Mile Rd., Detroit, Mich.

▲ Mention Item **NED-6444** when writing ▲

ELECTRIC FURNACE

Internal construction of this Temco electric furnace has been redesigned so as to practically eliminate cracking. Design is also claimed to give increased economy. Furnace is being used extensively for heat treating of small parts such as gears, tools and dies. It is also finding application as auxiliary unit to regular furnaces to prevent accumulation of small jobs while awaiting their turn in large central units.

Being compact, unit is particularly suited for laboratory operation. It is completely portable and can be used for routine testing, development work, drying, ashing, ignitions, fusions, and similar jobs.

Furnace will operate continuously at temperatures up to 1500 degrees Fahr. and intermittently up to 1850 degrees Fahr. Heat selection in model GR and model GRP, illustrated, is through heavy-duty rheostat with three ranges: 70 to 400, 400 to 800, and 800 to 1500 dgerees Fahr. Adjustable contact bands permit precise selection in any of three ranges. Fourth switch, having no series resistance, allows rapid heating to maximum temperature in approximately 30 minutes.

Model GRP has accurate indicating pyrometer which is calibrated in Centigrade and Fahrenheit scales. Furnace operates on either alternating or direct current and can be specified for use on either 115 or 230 volts. Power consumption is 1200 watts. Heating chamber is 4 inches wide, 3¾ inches high and 3¾ inches deep. Made by **Thermo Electric Mfg. Co.**, 334 W. Sixty-ninth St., Chicago, Ill.

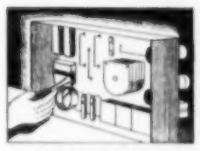
▲ Mention Item **NED-6445** when writing ▲

PRESSURE, FLOAT & VACUUM SWITCHES

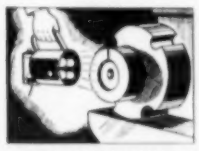
● **SQUARE D** offers a wide range of switches, designed and built for practically all sizes of water pumps, condensate pumps, vacuum pumps, and air compressors. You'll find this catalog a valuable source of reference. Send for your free copy today.

SQUARE D COMPANY
REGULATOR DIVISION
6060 RIVARD ST., DETROIT, MICH.

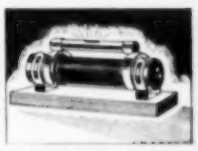
▲ Mention Item **NED-6446** when writing ▲



TEST LIGHTS



MOTOR SPEED TESTS



FUSE INDICATORS

WAR PLANTS NEED G-E NEON GLOW LAMPS IN SCORES OF VITAL PLACES!

TYPE S-14 G-E Glow Lamp is available in 3, 2½, and 2-watt sizes.

WAR Plants can use G-E Neon Glow lamps in scores of vital places . . . such as test lamps for electrical circuits, for synchronizing any two or more moving machines and checking speed, as indicators for fuses and for machines with small quiet motors which may run unnoticed, and as pilot lights to show location of switches, sprinkler valves, alarm boxes, emergency doors and exits. They require little power, can operate on standby battery or generator service and stand up under shock or vibration. Maybe some vital equipment you make can be made more efficient with the help of glow lamps. Your electrical wholesaler can supply the complete line.

NELA SPECIALTY DIVISION, LAMP DEPT.
GENERAL ELECTRIC
410 Eighth Street, Hoboken, N. J.

▲ Mention Item **NED-6447** when writing ▲

Gatke

High-Heat-Resisting Asbestos

BRAKE BLOCKS
CLUTCH FACINGS
FRICTIONS

Made for ALL Requirements

Engineered to do the job RIGHT

Just tell us What You Need!

Gatke Brake Blocks and Frictions are made in all shapes and sizes to machined accuracy.

Gatke Clutch Facings — Made in Disc, Gear-Toothed and Cone Types for all applications—Large or Small.

GATKE CORPORATION
220 N. LaSalle St. Chicago

▲ Mention Item **NED-6448** when writing ▲

SPEEDING up production through use of simple jig which holds tubular framework during welding operation.

DE-STA-CO Toggle CLAMPS assure quick, positive clamping and easy, instant release. When you design fixtures for holding parts during welding, machining, reaming, inspection, drilling, assembly or similar operations always specify De-Sta-Co Toggle Clamps . . . built in all sizes from the small 9¼ ounce aircraft model up . . . every clamp carefully engineered to assure ease of operation without undue looseness.

Bulletin No. 41 illustrates many uses . . . sent free, on request.

DETROIT STAMPING CO.
Established Over 25 Years
360 Midland Ave • Detroit, Mich.

▲ Mention Item NED-6449 when writing ▲

BALDWIN-HILL
MONO-BLOCK

Only this One Insulating Block Needed for Both High and Low Temperatures. . . . Effective up to 1600° F. . . . For Insulation of Boilers, Breechings, Steam Engines, Heat Treating Furnaces, Oil Refinery Towers and Exchangers, Japanning and Enameling Ovens and similar hot equipment.

EASY TO APPLY: MONO-BLOCK can be readily cut and fitted to any size or shape and conforms to surface irregularities such as rivet and bolt heads, small angles and welds.

B&H BALDWIN-HILL INSULATIONS for Industry

This and many other Heat Insulation Products are described in our NEW CATALOG – SEND FOR IT

BALDWIN-HILL CO.
541 Klagg Avenue, Trenton, N. J.
New York, N. Y. Kalamazoo, Mich.

▲ Mention Item NED-6450 when writing ▲

DIAMONDS for Victory

BIG-HED-NIBS
LOC-KEY-SET

- Three grades of diamonds. Common Quality $12 per karat. Medium quality $24 per karat. Select quality $48 per karat. (Contour template diamonds supplied only in Medium and Select quality.)

All diamond sizes ¼ to 10 karat are nib mounted for immediate shipment . . . Billed subject to approval. Specify quality of diamond wanted. We recommend a minimum size of one karat for each 6" diameter of grinding wheel. (24 hour resetting service, $1.00 post paid.) Grinders instruction card free.

RE-SET-ABLE

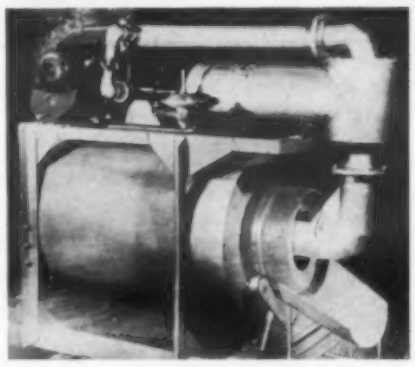
Cooler dressing
Closer Tolerances
Micrometer Accuracy
Because: Wing key heat dissipation and absolute diamond lock nib.

Send specifications and prints for prices on turning and boring form tools.

DIAMOND TOOL COMPANY, Not Inc.
Sheldon M. Booth, Pres.
240 E. 41st Street CHICAGO, ILL.

▲ Mention Item NED-6451 when writing ▲

DRYING MECHANISM



Used in conjunction with large annealing furnaces, this special quenching and drying mechanism may be designed for wide range of products where temperature requirements approximate 400 degrees Fahr. Materials may be charged into Salix dryer by means of individual feeder mechanism, or equipment may be incorporated in continuous production line with other equipment.

Materials are conveyed through dryer by internal spiral screw which deposits them at opposite end from which they are received. During course of drying cycle, products are continuously tumbled. Capacity for small steel parts ranges up to 9500 pounds per hour.

Drying is accomplished by hot air steam, blown into interior of perforated drying drum. This hot air comes into direct contact with all parts as they pass through chamber. Standard equipment includes automatic temperature control which maintains desired temperature, variable speed drive and motor driven air circulating fan. Made by **Salem Engineering Co.**, 100 S. Broadway, Salem, O.

▲ Mention Item NED-6452 when writing ▲

RESIN ADHESIVES

Need for cold setting resin adhesives for assembly of resin bonded plywood parts and for other applications where durable water-resistant bonds are required has led to development of Uformite CB-551, improved type urea formaldehyde resin adhesive. Product is claimed to fully meet requirements of Army-Navy Aeronautical specification AN-G-8, as well as earlier Army specification 14,110 and Navy Department specification G-29.

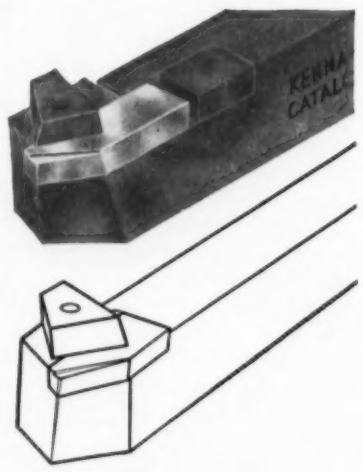
Replacing previous adhesive CB-550, material is supplied in powder form which is easily dispersible in water and requires addition of no hardeners or setting agents. Though resin itself is colorless, inert green dye has been incorporated to facilitate indentity, mixing and spreading. Material begins to set as soon as water is added and life of mix varies with temperature, being usable for approximately four hours at 75 degrees Fahr. which is lowest temperature at which it can be applied.

In addition to aircraft assembly work and marine construction, resin is designed for structural fabrication, furniture construction, self-retentive and clamped joints, lumber core gluing and curved construction of all types. Joints are waterproof and highly durable. Made by **Resinous Products & Chemical Co.**, 222-1 W. Washington Sq., Philadelphia, Pa.

▲ Mention Item NED-6453 when writing ▲

CLAMPED-ON CARBIDE TOOLS

Developed for all types of machining operations, this clamped-on type carbide tipped tool is designated as style 51, as shown, and style 52 for opposite hand. Tool differs from previous clamp-on types in that clamp is secured by screw which is inserted from bottom of tool, through shank to top of clamp. This design eliminates any mechanical device on top of clamp which might interefere with most efficient use of tool.



Flat surface is milled out of tool shank to accommodate cutting tip and clamp holds tip in position. Clamp should not be used as chip breaker. Where chip breaker is desired, it should be ground in tip. As tip is reground following use, it is moved forward and out under clamp, shims being placed behind it. When tip becomes too small for service in holder, it frequently can be brazed into small shank for lighter turning or boring operations.

Because of elimination of brazing strains and because unequal heat expansion in tip and shank need not be considered, these tools afford high production. Design permits use of durable heat-treated shank. Better grinding results when tip only is touched to wheel. This eliminates tool "crazing" or "checking" of tool edges. Grinding wheel does not become clogged or glazed. Tools are available in 1, 1¼ and 1½-inch square sizes, and 1 x 1½ and 1½ x 2-inch flat sizes. Made by **McKenna Metals Co.**, 171 Lloyd Ave., Latrobe, Pa.

▲ Mention Item NED-6454 when writing ▲

"LET ME DO THAT Contour Machining"

If I can lift that work I can Machine It!"

With a DUPLIMATIC on the job, the accuracies you've got to have at the speeds you demanded are now a fact. You shove a DUPLIMATIC up to any machine tool, connect it up and within a few hours the old operator, or "greenhorn", is doing more work, more accurately even, than was ever possible by manual control alone.

This mill is equipped with a DUPLIMATIC. During the actual cutting the operation is *full automatic*. She CAN operate this milling machine just as she can quickly learn to handle any standard tool room machine if it has a DUPLIMATIC.

Can she lift the work? That's the only question before she "takes over" from the recently drafted, skilled operator you thought you couldn't get along without.

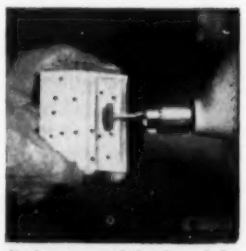
Do it with a DUPLIMATIC ★
THE FASTEST, MOST ACCURATE, MACHINE TOOL CONTROL

▲ Mention Item NED-6455 when writing ▲

▲ Mention Item NED-6456 when writing ▲

A 3-WAY PERFORMANCE

Removing heat stain, and finishing tube seam with Brightboy Wheel.



De-burring and finishing holes and edges in Alclad part with Brightboy Wheel.

WELDON
Bright
"The Soft Rubber Bright"

BRIGHTBOY is an outstanding example of how a minimum amount of rubber is put to maximum use, economically effecting substantial time and work savings in America's war industries.

In use, Brightboy's abrasive "recedes" into its rubber binder, producing a unique effect—does not polish, a slight operation bevels edges to grind and where g... Brightboy rolls and in numerous manual w...

WELDON RUBBER
Bright

▲ Mention Item NED-6457 when writing ▲

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...t work
...e It!"

...job, the
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...to any
...d within
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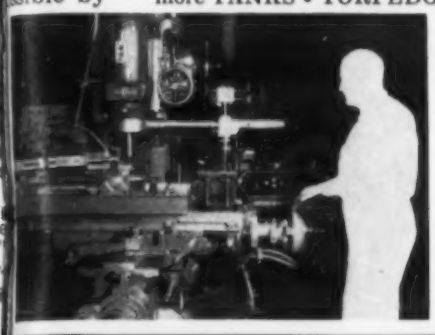
...ssible by

DUPLIMATIC automatically turns one, two or three feed screws, on almost any standard machine tool in your plant. Turns them simultaneously, yet independently of each other. The result is blended radii . . . less hand-finishing . . . fewer scrapped parts.

Faster, More Accurate Contour Machining

Prompt deliveries of DUPLIMATICS eliminate long waiting for specially built automatic machines. Added floor space is not required.

Ask for complete information. Find out how the biggest mass producers of war goods like Pullman-Standard, Pressed Steel Car, Pontiac, Chevrolet, Buick, Cadillac and all the other important producers are using DUPLIMATICS to produce more TANKS • TORPEDOES • BOMBS • GUN PARTS • AIRPLANE ENGINE PARTS TANK TURRETS ANTI-AIRCRAFT GUN PARTS • AIRPLANE LANDING WHEELS.



. . .

When Your Pet Machinist Gets Drafted . . . Draft *DUPLIMATIC.*

T C ★ ★ TOOL CONTROL

DETROIT UNIVERSAL DUPLICATOR CO.
735 E. Milwaukee Ave., Detroit, Mich.

NED-6455 when writing ▲

A "SURE-FIRE" METHOD

OF SPEEDING PRODUCTION

• BULLETS OR BILLETS... BOMBS OR BOTTLES...

...there's one sure-fire method of keeping 'em ...olling faster . . . at less cost per man-and-...machine-hour . . . and with less worker ...atigue. And that's to do it with a well ...planned Conveyer System. Your Mathews ...engineer is at your service, as usual.

MATHEWS CONVEYER COMPANY
ELLWOOD CITY, PENNA.

...Field Engineers and Sales Offices located in 30 Industrial Centers.

DOUBLED CAPACITY FOR WAR PRODUCTION

Stepping up our productive capacity month after month has barely enabled us to keep pace with mounting war orders. As long as this condition exists, it becomes increasingly difficult to meet civilian requirements. Our one big job is the handling of war material. That job must come first.

NED-6458 when writing ▲

...ORMANCE with WELDON ROBERTS

★ DE-BURRING
★ FINISHING
★ POLISHING

...ightboy

REG. U.S. PAT. OFF.

...e Soft ...ber Binder Cushions The Abrasive"

...ect—de-burring, finishing ...d polishing, and putting on ...slight radius, all in one ...eration. In function, it ...dges the gap between a ...nd and a buff, taking over ...ere grinders leave off.

...ightboy sticks, blocks, ...ds and special shapes have ...umerable applications in ...nual work and drill press jobs. Brightboy is particularly effective in close tolerance work.

Available to war industries through mill supply dealers. Brightboy field men are at your service. Write us for prices, catalog and leaflet on "Methods and Applications" if your dealer cannot give you detailed information.

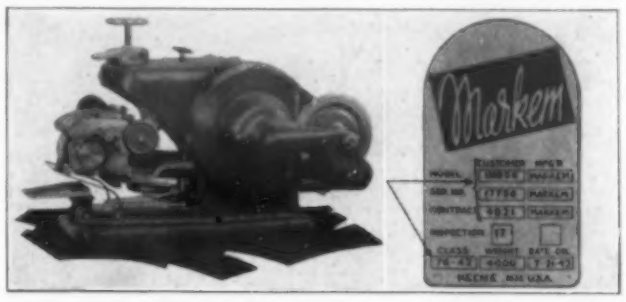
BRIGHTBOY INDUSTRIAL DIVISION
WELDON ROBERTS RUBBER CO.
Newark, N. J., U. S. A.

...ON ...BERTS
...ht b o y

NED-6457 when writing ▲

SERIAL NUMBERING MACHINE

Originally developed and adapted in shoe and kindred trades, this model 100 serial numbering equipment is now being used widely for indenting and coloring serial, contract or model



numbers, as well as general information which can be applied by use of figures, symbols or letters on plastic nameplates and similar articles.

Plastics of nearly all types can be indented and colored by use of embossing compounds which ink printing element before it is impressed into plastic. Machine is particularly adaptable for imprinting variable designations on basically pre-printed nameplates.

Rotating type wheels permit quick changes of variable detail as required. Type style or size of character required may be chosen from large variety of faces. Three widths of printing heads are available.

Machine speed is maximum of 4000 strokes per hour, with marked piece production varying from 500 to 1000 parts per hour. Unit may be driven from line shaft or with ¼-horsepower motor through V-belt drive. Made by **Markem Machine Co.**, Box 475, Keene, N. H.

▲ Mention Item **NED-6458** when writing ▲

CARD FILING EQUIPMENT

Practical and useful for filing record cards, Perma-Bilt filing equipment is made of selected hardwood. It is designed to handle following standard size cards: IBM cards, time cards, finger-print cards, 5 x 3, 6 x 4, 8 x 5, and 9 x 6 inch cards. Cards are held in place even when drawer is in inverted position by Statite compressor.

All sectional units measure 37¼ inches in width and 24½ inches in depth. These units will interlock. Any combination of sizes can be selected and built into one unit as shown in illustration. Base is recessed for toe space. Posting or reference shelf may be included. Made by **The Planned Business Equipment Co.**, Dept. NED, 1422 Euclid Ave., Cleveland, O.

▲ Mention Item **NED-6459** when writing ▲

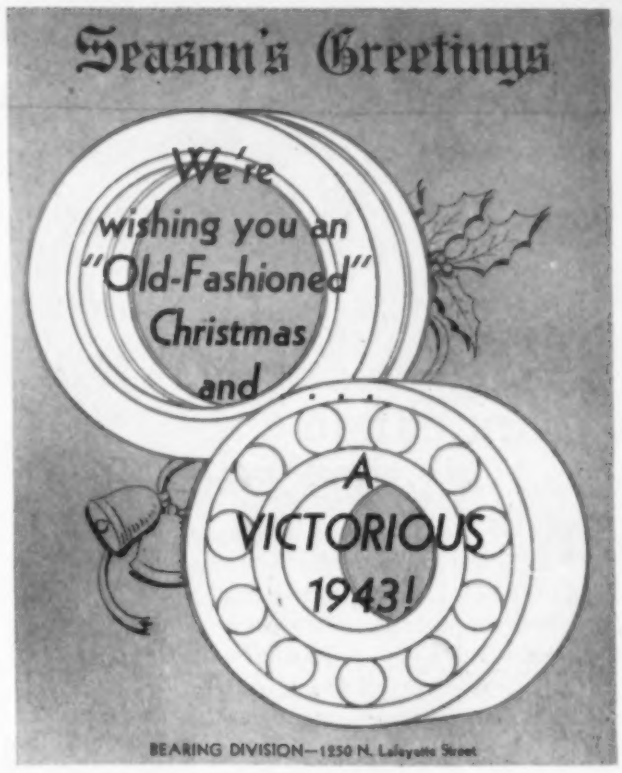
FILTERING APPARATUS

Developed for laboratory use, this Filtrator enables technician to collect both precipitate and filtrate in from one-third to one-half the time required in ordinary gravity filtering. Equipment consists of vacuum chamber, receiving vessel and special double wall funnel which is slotted on inside surface, all assembled in sturdy base.

Device can be operated as single unit or in combination with other units served by single vacuum source. In-built valve permits disconnecting any unit in system without interrupting operation of other filters. Normally slow procedure of filtering for quantitative analysis using dense filter paper is speeded up considerably.

Base of unit is metal casting which houses control valve and vacuum connections. Rubber pad on top of this base serves as air-tight gasket for vacuum chamber. Vacuum chamber and beaker rest on this pad. Special funnel is inserted in rubber stopper in chamber opening. Thus, when vacuum is applied within chamber, filtrate is drawn directly into beaker. List price is $12.50. Made by **Fisher Scientific Co.**, 711 Forbes St., Pittsburgh, Pa.

▲ Mention Item **NED-6460** when writing ▲



McGILL MANUFACTURING COMPANY, INC.
VALPARAISO, INDIANA

▲ Mention Item **NED-6461** when writing ▲

"NON-STOP" TRUCKING WITH MAGIC DOORS!

Stop-and-go trucking costs money! See that your doors between receiving room and plant, plant and shipping room and other important points are equipped with Stanley Magic Door Controls that open the doors at your approach and close them automatically. You'll save time, save bump damage to doors, save heat . . . for these doors don't stand open.

Stanley Magic Door equipment can be installed on your present doors. A tiny beam of light does all the work . . . but write for the whole story, free on request.

THE STANLEY WORKS
Magic Door Division, New Britain, Conn.

STANLEY MAGIC DOORS
Require No Hand To Open Them

▲ Mention Item **NED-6462** when writing ▲

WE HAVE THE MACHINERY — 2 LARGE PLANTS

ENGINEERS AND EXPERT CRAFTSMEN — A BIG FORCE PLUS 30 YEARS EXPERIENCE!

D DWD D

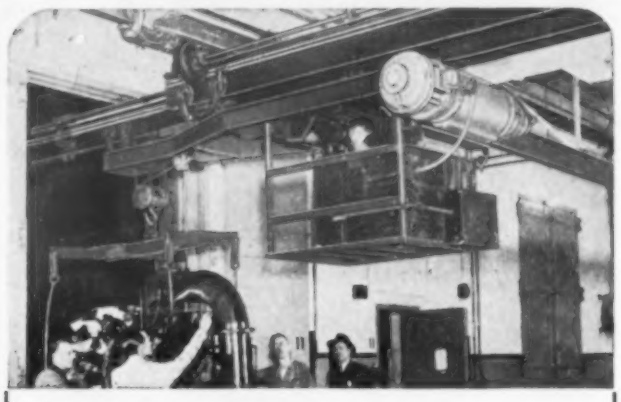
Bring on Your Work!
or problems in windings for Electrically-activated products.
Davis-made
COILS, COIL ASSEMBLIES, SOLENOIDS, TRANSFORMERS
TO YOUR SPECIFICATIONS WITH ASSURANCE OF THE UTMOST PRECISION AND QUALITY.
Quick Delivery • Any Quantity
Send B.P., Call, Wire, Write at once. Ask for Catalog.

D DWD D

D DWD D

DEAN W. DAVIS & CO., Inc.
Precision Made Coils for Every Electrical Purpose
549 W. FULTON ST. CHICAGO, ILL.

▲ Mention Item **NED-6463** when writing ▲



"AIR CARGO"
in your plant, too!

FROM raw materials to finished products, in every operation, American MonoRail Overhead Equipment can overcome your handling problems and help speed production. See an American MonoRail Engineer today.

THE AMERICAN MONORAIL CO.
13116 Athens Ave. Cleveland, Ohio

WRITE FOR Blue Book illustrating hundreds of MonoRail installations.

▲ Mention Item NED-6469 when writing ▲

LEFT-&-RIGHT LAY
Construction of Endless Ropes

1. Provides perfect balance to eliminate load spinning
2. Extreme flexibility and kink-resistance
3. No splices to wicker and injure hands
4. Plus positive safety of endless wire ropes

. . . IN MACWHYTE ATLAS SLINGS!

No other sling is so made. This braided construction of left-and-right lay endless wire ropes makes Macwhyte Atlas Slings timesavers, laborsavers, property-savers, and even life-savers.

You can speed materials handling SAFELY with Macwhyte Atlas Slings. Write on company letterhead for helpful rigging bulletins.

MACWHYTE COMPANY
2932 Fourteenth Ave., Kenosha, Wis.

Manufacturers of slings and wire ropes to meet every need.

There's a Design and Type To Meet Your Needs

No. 637-8

MACWHYTE *Atlas* SLINGS
Safety PLUS Performance

▲ Mention Item NED-6470 when writing ▲

"HYPER-MILLING" Explained!

ASK FOR BULLETIN FE-106

Firth-Sterling
STEEL COMPANY
McKeesport, Pa.

▲ Mention Item NED-6471 when writing ▲

SMALL PARTS CLAMP

Containing several improvements over model KP-830, this Midget clamp has bolt retainer integral with toggle bar. This design assures that there will be no variation in spindle po-

sitions on successive clamping operations. Ample clamping pressure is afforded through use of toggle action mechanism. Though small in size, this tool is strong and powerful.

Unit is particularly applicable for holding small parts, particularly where relatively heavy clamping action is required. Cushioned spindle is adjustable for various thicknesses of plate or size of parts to be held together or onto fixture. Made by **Knu-Vise, Inc.**, 16831 Hamilton Ave., Detroit, Mich.

▲ Mention Item **NED-6472** when writing ▲

DUST RESPIRATOR

All metallic parts have been replaced with transparent plastic in this Clear Vue Dustfoe respirator. Both face piece and filter housing are of this material. In addition to being light in weight and durable, transparency of material enables operator to make visual inspection or check of filter while respirator is in use.

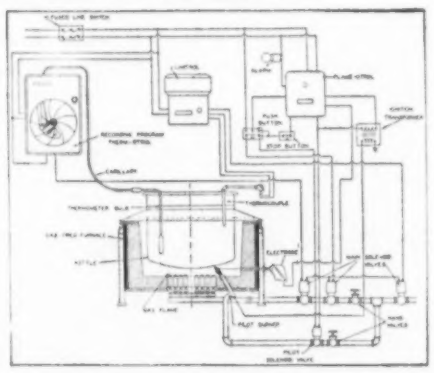
Filter and respirator of this unit are approved by U. S. Bureau of Mines either for protection against pneumoconiosis-producing dusts and mists, or for all dusts, including lead dust. Like its aluminum predecessor, device is so constructed as to permit complete working freedom. It may be worn by workers using goggles or spectacles.

Facepiece conforms readily to any facial contour. Army gas mask type exhalation valve is employed, assuring low breathing resistance. All parts are readily replaceable. Device may be washed or sterilized. Made by **B. F. McDonald Co.**, 1248 S. Hope St., Los Angeles, Calif.

▲ Mention Item **NED-6473** when writing ▲

TEMPERATURE CONTROL

This automatic temperature cycle or program control application is for salt bath treatment using pot-type furnace or processing kettle and incorporates excess temperature shut-off and combustion explosion protection. Instrument installation is designed to control fuel so as automatically to provide desired temperature at any period regardless of temperature variations required; to provide record of temperatures experienced during cycle; to give excess temperature shut-off protection and protection against burning materials with low flash points, or in event of fuel valve or instrument failure; and to eliminate combustion hazards. Control may be applied to gas or oil fired equipment.



Recording program Therm-otrol enforces any desired heating or cooling cycle over any time period. Single motor and drive, available for any timing period, rotate recording chart and contoured cycle disc. Thermometer bulb of unit is suspended in material being processed. Solenoid valve in main fuel line controls required amount of fuel which is ignited by pilot. Flame-otrol for protection against failure of pilot uses conductivity of flame as actuation medium and closes main line fuel valve in event of pilot not functioning. Alarm bell advises operator of fuel shut-off.

Use of Limitrol unit affords protection against possibility of valve or control instrument failure upsetting treatment or process by overheating, or by heating above flash point of material handled. This instrument is set a few degrees above highest temperature called for in process and is actuated by thermocouple suspended in kettle. Controls developed by **Wheelco Instruments Co.**, 829 W. Harrison St., Chicago, Ill.

▲ Mention Item **NED-6474** when writing ▲

NEW CATALOG FREE

Get this valuable engineering data book and catalog! 240 pages of helpful facts, charts, tables and diagrams including exclusive, new data. Here's *complete* welding fitting information all in a convenient, handy volume. Write on business letterhead for free copy.

★Contains all up-to-date and essential technical data on welding fittings!
★Many exclusive charts and facts never before available!
★Specially designed, indexed and tabbed for quick, easy use!

TUBE TURNS
INCORPORATED
161 E. Broadway - LOUISVILLE, KY.

TUBE-TURN *Welding Fittings*

▲ Mention Item NED-6475 when writing ▲

MOBILITY IN PRODUCTION IS GOOD STRATEGY, TOO!

In our regular line of materials handling equipment, each unit has been designed to do a specific job efficiently and economically. In addition, our engineers have worked out innumerable variations to simplify and speed up special haulage problems. Let EWC help you—just as we have helped solve the handling requirements of hundreds of other firms.

WRITE FOR BULLETINS, prices, and helpful suggestions applying to your own special needs.

EWC TRAILERS
ELECTRIC WHEEL CO.
Dept. N, Quincy, Illinois

▲ Mention Item NED-6476 when writing ▲

IT'S NO WONDER SUPERIOR IS THE BIG NAME IN SMALL TUBING!

"We used to call metal tubing from 5/8" OD down, 'Specialty' tubing, but not any more."

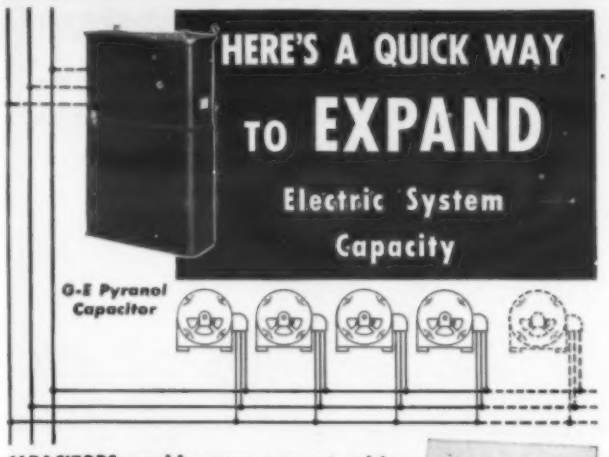
Superior Tube Company spends all its time making tubing up to 5/8" OD—cold drawn—seamless, welded,—in practically any metal. We're geared to make "small stuff" as standard production.

SUPERIOR SEAMLESS . . . WELDRAWN (welded) Stainless . . . BRAWN type "Monel" and "Inconel" . . . are being used in many industries. Let us work with you on your small tubing problems. Our complete laboratory and technical facilities are at your disposal. Find out why Superior is the "BIG Name in Small Tubing".

Write for Superior bulletin, no obligation.

SUPERIOR TUBE CO. DEPT. B NORRISTOWN PENNSYLVANIA
(THE BIG NAME IN SMALL TUBING)
"For fine small tubing" in Seamless and other Types and various Metals

▲ Mention Item NED-6477 when writing ▲



CAPACITORS enable your present wiring to carry more power

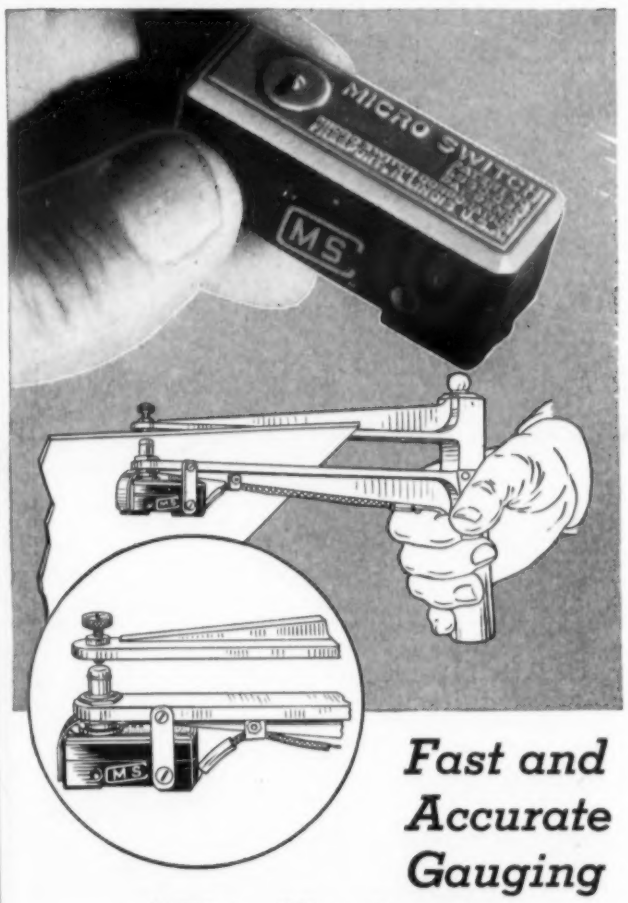
You can add motors—also electric furnaces or other equipment—to circuits that are already overloaded if the power factor is low. How? By installing capacitors. They will neutralize the reactive (nonworking) kva and enable the entire system to carry more *working* current—as much as 40 per cent more in some cases. Ask your G-E representative today to estimate the possible increase in your circuit capacity.

For Helpful Information

Write for Bulletin GEA-77. General Electric Co., Schenectady, N.Y.

GENERAL ELECTRIC

▲ Mention Item **NED-6478** when writing ▲



Fast and Accurate Gauging of Thin Metal with a

MICRO SWITCH

Over-tolerances in large quantities of thin sheets of metal can be detected quickly by this simple gauging device.

A frame with 8¼-inch throat and grip handle was constructed as shown. A panel mounted Micro Switch, either double throw or normally open, on the lower arm is wired to a pen light cell in the handle, and is grounded to the frame of the gauge. A knurled thumb screw on the upper arm can be set to measure thicknesses up to ⅜ inch. A standard gauge is used in setting the opening at the maximum permissible thickness. When over-tolerance is encountered, the Micro Switch plunger is depressed, lighting the pen light at the top of the handle. Notice that only one hand is required to operate the gauge. The top arm must ride firmly over the material being gauged or errors will result.

The unique combination of sensitive accuracy and rugged durability of Micro Switch makes it adaptable to many shop applications such as this gauge, and to countless control problems. Micro Switches operate at the same point through millions of operations—on pressures as low as 1¼ ounces and movements as low as .0002 inches, yet the basic Micro Switch weighs only an ounce.

More than likely there's a place in your production scheme where Micro Switch can save time and reduce costs . . . or can permit more compact design and insure better operation of your product. Micro Switches possessing a variety of actuating characteristics are available in a wide range of housings to meet almost any requirement. They are listed by the Underwriters' Laboratories with ratings of 1200 V.A. loads, from 125 to 600 volts A.C.

For complete details regarding the Type BZ-RQ1 Micro Switch used in the above gauge and other Micro Switches, housings, and application suggestions, see Micro Switch Catalog 60. Copy will be sent on request.

Micro Switch is a trade name indicating manufacture by Micro Switch Corporation.

© 1942

MICRO MS SWITCH

Manufactured in FREEPORT, Illinois, by Micro Switch Corporation. Sales Offices: New York, Chicago, Boston

▲ Mention Item **NED-6479** when writing ▲

THREADED PLUG GAGES

Hand finished and inspected with exact mechanical and optical equipment, these threaded plug gages are ground from long wearing alloy steel. They are made in full range of sizes from No. 4 to 6-inch diameter. In certain styles they may be had in larger sizes. Gages are produced in standard thread forms, including National Fine, National Coarse, National Extra Fine, National Uniform series, Metric and special pitches in both right and left hand threads.

Although these precision tools are made as complete units, consisting of "go" member and "no go" member with handle, any member may be obtained separately. Gages may be produced to special tolerances upon specification. Made by **Vard, Inc.**, 2971 E. Colorado Blvd., Pasadena, Calif.

▲ Mention Item **NED-6480** when writing ▲

PROTECTIVE COATING

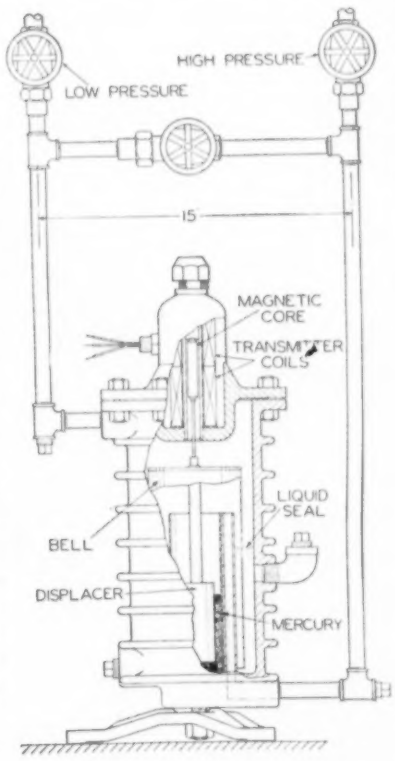
Featuring high gloss, flexibility and non-peeling characteristics, type AA Alkacite is black liquid coating which is designed for protecting surfaces from attack by acids and alkalies. Use is indicated for lining of tanks, vats and other vessels where abrasion is not present. It may be used for acid tanks in which acid brick facing is installed. Finish is not recommended for use in contact with oils, greases or commercial solvents.

Coating is applied readily with brush or spray. It dries readily. One coat is claimed to replace galvanizing for all exposed surfaces. Two coats or more are recommended for surfaces subjected to liquid contact. Made by **Protective Coatings, Inc.**, P. O. Box 56-NED, Strathmoor Station, Detroit, Mich.

▲ Mention Item **NED-6481** when writing ▲

FLOW TRANSMITTER

Used in conjunction with standard Cochrane electric meter receiving units, this style H transmitter is designed specifically for measurement of low static pressure gases where low differential and resultant low permanent pressure loss are of prime importance. Unit is designed for differentials of 2, 4, 6, 8 or 10 inches of water. Standardization of design permits altering of differential head by changing displacer and amount of mercury in central reservoir. Bell casing is designed for maximum working pressure of 75 pounds per square inch.



Differential pressure created by flow is applied to opposite sides of oil sealed bell, with pressure from connection before primary element being applied under bell and downstream pressure above bell. Metallic displacer in central reservoir is submerged in mercury to point where bell and displacer just float when no differential pressure is exerted. Flow of gas resulting in change of differential pressure raises bell, lifting displacer from mercury, change in buoyancy being just sufficient to give bell movement proportional to differential pressure. Translation of bell movement to uniform chart readings is accomplished by individually calibrated cam in receiver.

Differential pressure in excess of design differential moves bell to upper limit and gas bubbles out from under it with relatively little disturbance because of large volume of bell in comparison with size of high pressure inlet pipe. Normal operation is resumed when differential returns to normal.

Accessibility to interior permits quick and thorough cleaning as may be required on blast furnace and coke oven gases. Sealing oil level is easily checked with filling plug. Mounting bracket can be used for either wall or floor installation. Made by **Cochrane Corp.**, 3143 N. Seventeenth St., Philadelphia, Pa.

▲ Mention Item **NED-6482** when writing ▲

Positive, Continuous Operation

Vital Then—Indispensable Now!

For over 12 years—24 hours a day—355 days a year—not just one Cleveland Drive but more than 50 of them have kept this large manufacturer's machines in steady production.

More than 12 years ago an Eastern manufacturer selected Cleveland Worm Gear Speed Reducers for the important drives throughout his large Mill, and now tells us:—

"Cleveland Drives have given positive and continuous operation."

Install Clevelands and you will keep *your* machines in steady production too—with assurance of continuous, trouble-free performance through many years to come.

Your Clevelands will never let you down! The Cleveland Worm & Gear Company, 3283 East 80th Street, Cleveland, Ohio.

Affiliate: The Farval Corporation, Centralized Systems of Lubrication.

In Canada: PEACOCK BROTHERS LIMITED

CLEVELAND WORM GEAR *Speed Reducers*

▲ Mention Item **NED-6483** when writing ▲

An Extra Ship a Year!

By eliminating the shutdowns formerly required to lubricate, one Farval-equipped Mill alone produces enough additional plate to build *an Extra Ship a Year.*

Farval has also increased the life of the roll neck bearings some 5 times—eliminating the additional shutdowns formerly required for bearing changes. On another Mill, the savings in bearing replacements amounted to $7,500.00 in one year.

On still another Mill, the reduced friction resulting from positive lubrication by the Farval System saved $19,000.00 on power in one year, over previous costs of lubricating by hand.

On many other Mills, as well as in shipyards and plants, the Farval Centralized System of Lubrication is doing a similar job to protect production schedules and increase yearly output, *by making machines do more.*

Save Time—save Power—save Bearings—Increase Production. Install Farval!

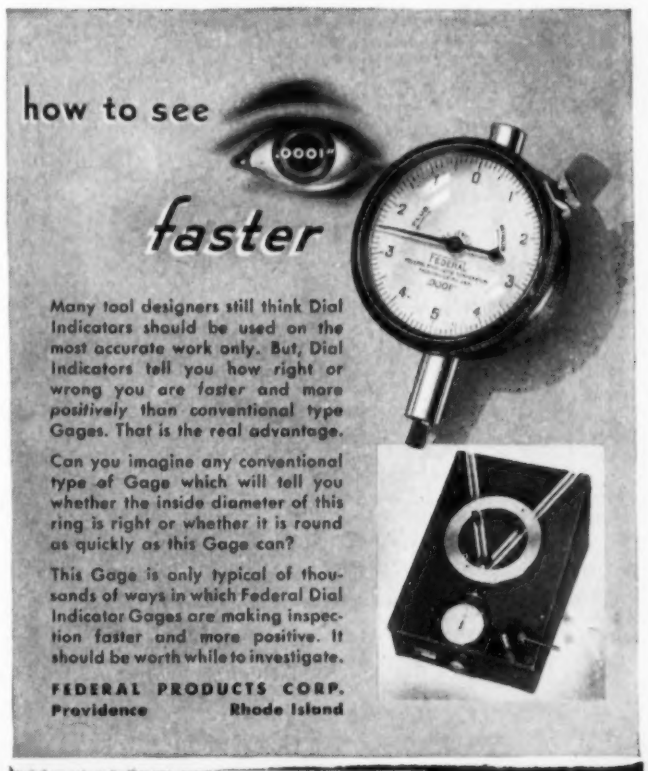
THE FARVAL CORPORATION, 3283 East 80th Street, Cleveland, Ohio

Affiliate of The Cleveland Worm & Gear Co., Automotive and Industrial Worm Gearing

In Canada: PEACOCK BROTHERS LIMITED

FARVAL CENTRALIZED SYSTEMS OF LUBRICATION

▲ Mention Item **NED-6484** when writing ▲



FEDERAL

PRECISION MEASURING INSTRUMENTS

Chicago • Cleveland • Detroit • Hartford • Los Angeles • Milwaukee • Montreal • Moncton
New York • Philadelphia • Pittsburgh • Rochester • San Francisco • St. Louis • Toledo • Toronto • Windsor

▲ Mention Item **NED-6485** when writing ▲

CLEAN MACHINES

Run Better - - -
Last Longer - - -
Avoid Repair Delays

★

USE IDEAL
"Tank-Type"
ELECTRIC CLEANER

Never quit fighting the worst enemy of machines and motors—Dust, Grit, Filings, Turnings, that cause machine damage, failures, shutdowns. Remove light and heavy dirt with this powerful IDEAL Portable "Tank-Type" Electric Cleaner. Heavy particles are trapped in tank, protecting motor, fan and bag. Super-powered, heavy duty, full 1 H.P. Motor. Velocity of air stream, 24,200 ft. per minute. Vacuums—Blows—Sprays!

THIS POWER UNIT, DETACHABLE

Can be used as powerful, portable hand cleaner, ideal for cleaning hard-to-get-at places. (Also available as separate cleaner.)

Write for Free Descriptive Literature

IDEAL COMMUTATOR DRESSER COMPANY
1032 Park Avenue Sycamore, Illinois
Sales Offices in All Principal Cities
In Canada: Irving Smith, Ltd., Montreal, Quebec

▲ Mention Item NED-6486 when writing ▲

3 ANSWERS

TO SUB-CONTRACT PROBLEMS

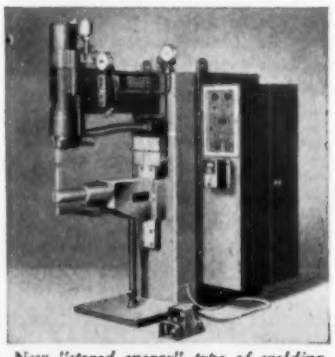
Call on EXPERIENCE
AT OUR 3 PLANTS

For fabrication of metal parts and finished products . . . take advantage of All - Steel - Equip facilities. With a rich background of 30 years experience in sheet metal fabrication A-S-E is well-equipped to take care of your sub-contract work . . . promptly and efficiently.

There are three factories, complete with trained men and machinery for shearing, forming, stamping, drawing, welding, brazing and assembling. A capable engineering staff, directed by alert management, is ready to help you with your production problems.

Let us help you work out your sub-contract problems quickly and effectively. Send your blueprints with specifications and delivery requirements for prompt quotations. Mail coupon.

ALUMINUM WELDING



New "stored energy" type of welding equipment is now available for sub-contract jobs.

A-S-E has complete facilities for fabrication of sheet metal from 7 to 30 gauges.

ALL-STEEL-EQUIP COMPANY, INC.
112 JOHN STREET, AURORA, ILL.

ALL-STEEL-EQUIP CO., INC.
112 John Street
Aurora, Ill.
☐ Send me the booklet showing the facilities and production capacity of the three All-Steel-Equip Co. plants.
☐ Have an A-S-E representative call.

Name .....
Address .....
City ..... State .....

▲ Mention Item NED-6487 when writing ▲

DERMATITIS PREVENTIVE

Added to all types of cutting oils, Steroil is powerful germacide which is claimed to afford complete protection against industrial dermatitis or skin trouble induced by mineral or

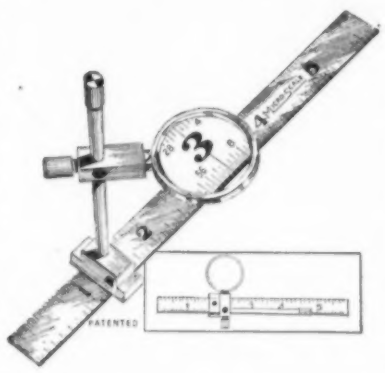
vegetable cutting oils. As a germacide, product is stated as being 26 times stronger than carbolic acid but is safe to use. Further advantage is that this additive prevents rancidity of oil, making it possible for operator to use same cutting oils repeatedly. It blends perfectly with oil.

This material has been added to regular line of cleansing agents, soaps and disinfectants produced by this company. Section of laboratory is shown in illustration above. Steroil made by **The Gerson-Stewart Co.**, Lisbon St., Cleveland, O.

▲ Mention Item NED-6488 when writing ▲

MAGNIFYING SCALE

Facilitating precision measuring, this Micro-Scale is fitted with magnifying glass which permits users to work to close tolerances. Tool maker can easily see such divisions as 1/64 inch at four times normal size. This permits him to work to within a few thousandths of an inch. Scale may also be used by inspectors and machinists who may have difficulty in measuring distances accurately with ordinary scales.



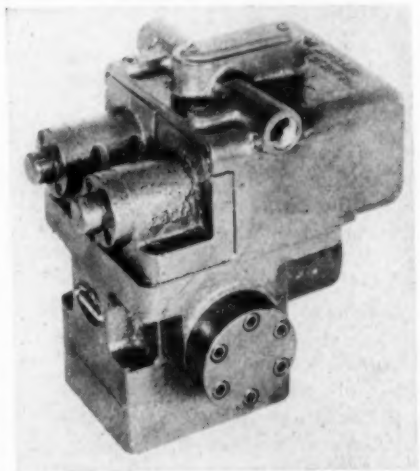
Device is constructed so that it lies flat on surface block. It has unbreakable plastic lens which focuses and slides along scale. Tool can be carried easily in pocket since it folds flat. Magnifying feature is claimed to reduce eyestrain.

Tool may be used for laying out tools and dies, measuring parts, checking tools and as simple magnifiers for fine drawings and inspection work. Distributed by **L. V. Fox Co.**, Dept. 9, Woodward Bldg., Washington, D. C.

▲ Mention Item NED-6489 when writing ▲

HYDRAULIC CONTROL VALVE

Providing either closed or open center operation by slight mechanical adjustment, this improved four-way hydraulic control valve is designed for use on machine tools, production ovens or wherever spring centered, four-way valve operation is desired. It permits change to different type operation without replacing valve. It is only necessary to remove or install ⅛-inch socket pipe plug.



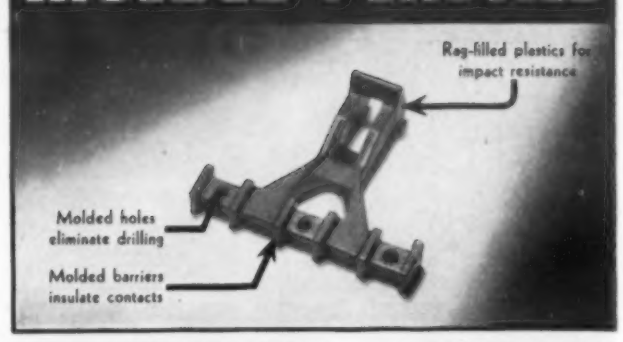
Device is available in three models with capacities of 10, 18 or 28 gallons per minute. Maximum recommended working pressure is 2000 pounds per square inch. Unit is furnished complete with sub-plate and solenoids in choice of voltage and current characteristics. Use of integral dumping valve eliminates need for separate pilot pressure system.

Main valve spool, which is normally spring centered, is operated hydraulically by pilot valves which are normally spring offset. These in turn are actuated by solenoids to produce full range of four-way operation. In addition, when adjusted for closed center, de-energizing solenoids blocks all ports; when adjusted for open center, de-energizing solenoids blocks cylinder ports but leaves pressure open to tank. Use of open center permits by-passing of oil to conserve horsepower and to reduce heat transfer during long idle period.

Applications of valves include raising and lowering doors and elevators in quenching operations, raising and loading broach carrier cylinders and pushing stock through heat treating furnaces. Made by **Hydraulic Hi-Speed Co.**, 5440 Tireman Ave., Detroit, Mich.

▲ Mention Item NED-6490 when writing ▲

MOLDED PLASTICS



MECHANICAL STRENGTH
IN ELECTRICAL PARTS

G-E Textolite plastics provide inherent insulation in combination with unusual mechanical strength. Parts for all applications can be made with almost any combination of physical properties. All parts made to your specifications. Write Section 1-12, ONE PLASTICS AVENUE, Pittsfield, Mass.

PLASTICS DEPARTMENT

GENERAL ELECTRIC

▲ Mention Item NED-6491 when writing ▲

MUST YOU CHANGE FROM CADMIUM TO *Zinc?*

If you are one of the plants facing the necessity of changing to zinc plating from your regular Cadmium plating, let Udylite's years of experience guide you.

Udylite's electrochemists will gladly supply you with the information you need.

The Udylite zinc plating process is known throughout the country for its high efficiency and excellent performance.

If shortages and changed specifications dictate that you must find a worthy substitute for Cadmium, we sincerely recommend the Udylite Zinc Process for the job.

Solution, materials and anodes are available for immediate shipment from stock. No special allocation forms are necessary—only your priority certificate with end use.

[Write for Technical Bulletin Z-1. It gives up-to-the-minute information on the change-over from cadmium to zinc.]

THE UDYLITE CORPORATION
1651 E. Grand Blvd., Detroit, Mich.
Cleveland 4408 Carnegie Ave. Long Island City, N. Y. 11-16, 44th Drive Chicago 1943 Walnut Street

▲ Mention Item NED-6492 when writing ▲

▲ Mention Item NED-6493 when writing ▲

HOPPERS

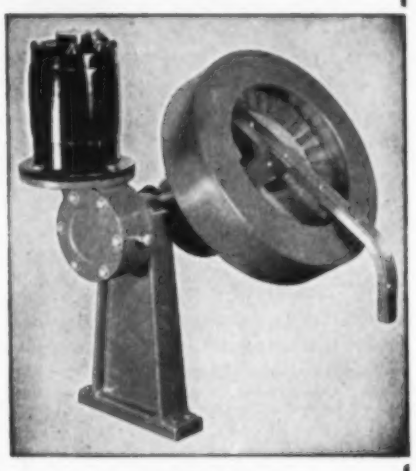
THE FASTEST FEEDING HOPPER EVER DESIGNED

SCREWS, SCREW BLANKS NUTS, RIVETS, PINS, PLAIN WASHERS, DISCS, BULLET CORES, SPECIAL PARTS

Send sample parts for feeding speed

Hopper units adaptable to any machine

Hundreds of satisfied users



DETROIT POWER SCREWDRIVER CO.
2819 West Fort St. Detroit, Mich.

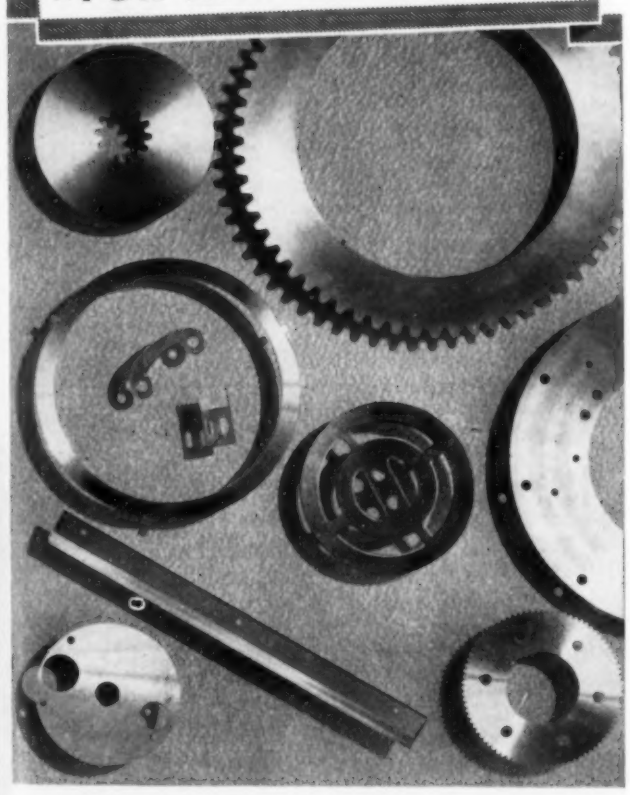
▲ Mention Item NED-6494 when writing ▲

SIMONDS

Heat-Treated and Ground

FLAT STEEL PRODUCTS

★FOR WAR INDUSTRIES★



Simonds offers you a dependable source of supply for heat-treated and ground Flat Steel Products, in any shapes, with edges square or beveled. And every order is protected by Simonds own complete quality-control, backed by 110 years of experience. Send in your blueprints, giving full details and quantity you need . . . plus, of course, your preference rating, which must be high to secure early delivery.

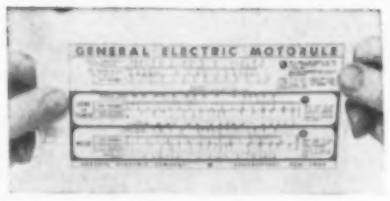
SIMONDS

SAW AND STEEL CO.

1350 Columbia Road Boston, Mass. | 228 First Street San Francisco, Calif. | 520 First Ave., So Seattle, Wash.
127 So. Green St. Chicago, Ill. | 311 S. W. First Ave. Portland, Ore. | 31 W. Trent Ave. Spokane, Wash.

▲ Mention Item NED-6495 when writing ▲

MOTOR LOAD CALCULATOR



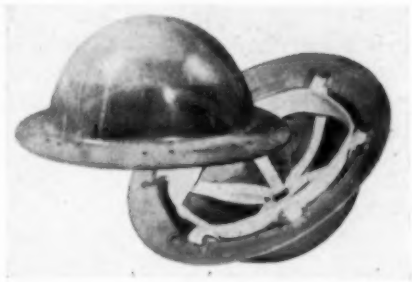
Computation of motor horsepower required for metal cutting operations on various machine tools is simplified with this Motorule load calculator. In addition to aiding manufacturers in determining that machines being adapted to new war work have proper motor capacity, rule enables users to select proper motors for machines which were formerly driven from line shafting.

Design is similar to that of engineer's slide rule. It is accurate for wide range of cutting operations on lathes, drills, planers and milling machines. All formulas used have been checked against actual load tests.

In using rule, operator refers to convenient table on back to select proper constant for type of metal to be cut. Then by setting scales to known cutting speed, feed and cut, user arrives at cutting power required on basis of ideal tool and machine conditions. Complete instructions are furnished with each calculator. Distributed free by **General Electric Co.**, Schenectady, N. Y.

▲ Mention Item NED-6496 when writing ▲

PLASTIC SAFETY HAT



Made of laminated Bakelite, this type P safety hat has been developed as effective replacement for type T metal hat which will no longer be made for the duration in interest of metal conservation. It uses same headband suspension, which permits quick and simple adjustment to all head sizes.

Advantages claimed for this safety hat are lightness in weight, exceptional strength and resistance to heavy blows. Adequate ventilation keeps wearer's head cool in hot weather. Lightness in weight makes it comfortable to wear over long periods of time.

Headband is fully suspended to provide cushioning hammock against shock of heavy blows. Hat may be cleaned or sterilized by steaming, or by any other accepted method. Made by **B. F. McDonald Co.**, 1248 S. Hope St., Los Angeles, Calif.

▲ Mention Item NED-6497 when writing ▲

PORCELAIN REPAIR MATERIAL

Developed to conceal chips, cracks or scratches, as well as to permanently repair any product of porcelain, china, glass, plastic, enamel, ceramic or vitreous ware, Jo-Lar Porcelain Renew has been improved. In addition to concealing damage to surface, material is claimed to bond perfectly with base in porcelain finish. It is waterproof and resistant to alcohol, acid, or gasoline. It will not crack, craze, check or shrink, according to manufacturer.

No. 1 is cement and filler. It is used to join broken pieces; fill cavities and chipped places; and to cement felt, leather, rubber, glass and other materials to wood, porcelain, stone, metal or other smooth surfaces. No. 2 is porcelain glaze. This may be used as finish over cement. It may also be used directly over slight scratches or shallow chips. Sample jars of both types are available for 50 cents, direct from manufacturer. Made by **Johnson Products Co.**, 507 Fifth Ave., New York City.

▲ Mention Item NED-6498 when writing ▲

GOGGLE FOG PREVENTIVE

Assuring clear lenses for wearer's of goggles under practically all working conditions, this Anti-Fog pencil contributes to plant safety. According to laboratory tests, this compound is claimed to secure excellent anti-fogging results for longer period of time than former types.

Workmen in steamy or highly humid atmospheres who must wear goggles for eye protection can see clearly at all times. Being in pencil form, material is easily applied. It will not crystallize nor crumble. Made by **American Optical Co.**, 1492 Mechanic St., Southbridge, Mass.

▲ Mention Item NED-6499 when writing ▲

2 IMPORTANT CONTRIBUTIONS TO VITAL HAND PROTECTION

Surety PATENTED TURN-CUFF Industrial Gloves

As the illustration demonstrates, Turn-Cuff gloves give added protection to hands subjected to injurious liquids by preventing surplus from running inside of gloves or onto arms and clothing. And when cuffs are turned down they provide a two-inch longer protective gauntlet. Safety directors and insurance Underwriters recommend Turn-Cuffs — workers praise them.

MAXIMUM PROTECTION

LONGER GLOVE LIFE

Surety SURESEAL SYNTHETIC

Another progressive development by Surety, Sureseal Synthetic, adds longest service life to industrial gloves. Amazingly resistant to acids, chemicals, aging, etc.—they withstand unusual conditions. Wartime needs come first but send today for complete informative literature with test reports and other money-saving facts.

Largest and Original Producers of Synthetic Gloves
THE Surety RUBBER COMPANY
CARROLLTON, OHIO

▲ Mention Item NED6500 when writing ▲

★ ★

SLY DUST COLLECTOR
FILTERS ALL DUST
OUT OF 16,000 CU. FT. OF AIR PER MINUTE

★ This Sly Dust Filter, connected with the sand blast room, grinders and tumbling mills in a large midwest foundry, extracts *all the dust* so that the air discharged by the fans is absolutely clean. ★ Among the outstanding features responsible for Sly popularity is the larger filter cloth area which results in greater filtering capacity per unit of space. Another is the automatic control, minimizing or removing entirely the human factor. ★ With Sly Dust Filters you can protect your men and machines from dust; in some processes save valuable materials by complete collection. *Yet, with all their advantages, Sly Dust Filters are not expensive.* Over 5,000 successful installations. ★ When writing please give full particu-

SLY THE W. W. SLY MFG. CO.
4748 TRAIN AVE., CLEVELAND, O.
INDUSTRIAL DUST CONTROL

▲ Mention Item NED-6501 when writing ▲

Now DY-NAMIC Balancing

to Eliminate **WEAR and BREAKDOWNS** caused by **VIBRATION** set up by **COUPLE-ACTION** for as little as **$295.00**

This Data Bulletin Brings You FREE

"WHAT EVERY WAR PRODUCTION MAN SHOULD KNOW ABOUT THE GROWING USE OF DY-NAMIC BALANCING"

In this bulletin you'll find the answers to why the practice of Dy-Namically balancing all rotating bodies, instead of merely statically balancing them, is now so swiftly being adopted in war production plants; why so many government specifications now call for Dy-Namic balance... why Bear Machines because of their lower cost, simplified operation and immediate availability, are the answer to American Industry's need for greater efficiency, less wear and smooth, uninterrupted production. For your free copy of this bulletin, address Bear Mfg. Co., Dept. NED Industrial Division, Rock Island, Ill.

BEAR STATIC and DY-NAMIC MACHINES

▲ Mention Item NED-6502 when writing ▲

What To Do When You Need Bearings

● Bunting's big catalog lists hundreds of sizes of completely machined and finished Bronze Bearings and Bars meeting practically every requirement of war production machinery, electric motors and industrial mechanical equipment.

These bearings are available from stocks at local wholesalers and in Bunting Warehouses. Made of the long-lasting alloy specified by leading machinery manufacturers in all lines. Write for catalog. The Bunting Brass & Bronze Company, Toledo, Ohio. Warehouses in All Principal Cities.

Bunting
BRONZE BUSHINGS • BEARINGS • PRECISION BRONZE BARS

▲ Mention Item NED-6506 when writing ▲

NEW illustrated index

of essential Stanley Hand Tools for war production plants. Government Department Specification numbers of approved tools are listed along with regular catalog numbers.

QUICK FACTS for busy TOOL BUYERS!

These twin aids to tool selection will save time for industrial buyers who want the EXTRA value of Stanley Tools . . . for hard, steady service in war production.

Handbook of Good Tools

Stanley Catalog No. 50 . . . 56 pages . . . prepared for industrial tool buyers. Lists 17 complete lines . . . outside indexed for convenience.

SEE THAT KEY MEN IN YOUR PLANT HAVE COPIES

STANLEY TOOLS DIVISION OF THE STANLEY WORKS NEW BRITAIN, CONN. *The Tool Box of the World*

▲ Mention Item NED-6507 when writing ▲

DROP FORGED CLAMPS EXTREME STRENGTH

These quick-action toggle clamps are the only drop forged clamps available—they last longer—it pays to specify them.

MODELS ILLUSTRATED—*Top:* Quick-Action Toggle Clamp—handle is down, out of the way, when holding work. • *Center:* Extreme Leverage Double Toggle Clamp—opens fully for complete clearance of work. • *Lower:* Extended Base Toggle Clamp—used as a "C" clamp or, when provided with stops, becomes a jig in itself.

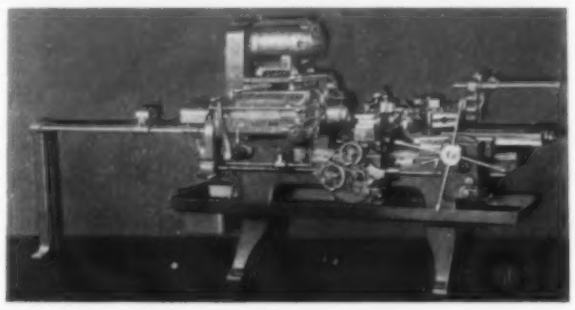
Products Engineering Co's Drop Forged Clamps are available in many other models and sizes from midget to 6" clamping bar. Send for catalog on clamps and other production tools.

PRODUCTS ENGINEERING COMPANY
700 EAST FLORENCE AVENUE • LOS ANGELES, CALIFORNIA

▲ Mention Item NED-6508 when writing ▲

RAM TYPE TURRET LATHE

Supplied complete with tools for both bar work and chucking work, this No. 5 Universal ram type turret lathe will accommodate 8, 10 and 12-inch diameter chucks. In addition,



machine may be equipped with special attachments which conform to specific applications or specific types of turret lathe work. These attachments include bar feed and collet chuck, taper attachment and threading alignment.

One piece bed and headstock is cast from nickel semi-steel and is equipped with double vee ways which assure lasting accuracy. Heavy bed has internal cross ribs to act as reinforcements. Bed casting sets in large pressed steel coolant pan and is supported on heavy cast iron legs. Pan has coolant pump at one end for collecting coolant, and is so arranged that it may be cleaned when necessary.

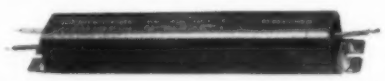
Spindle control is provided by lever which controls double multiple disc clutch on main drive shaft. This lever may be used to shift machine into neutral. Individual motor drive is supplied for unit and power is transmitted by multiple V-belts. Motor is mounted on headstock of machine. Motors of 3, 5 and 7½ horsepower are regularly furnished. Three or 5 horsepower motors are used to operate at 1200 revolutions per minute.

Universal carriage is included with six reversible cross and longitudinal feeds whcih operate independent of hexagon turret carriage. Feeds are engaged by individual levers which operate friction type clutches which may be adjusted from outside apron. Feeding is accomplished by pinion and rack, mounted on bed. Lubrication is automatically supplied to unit in necessary places. Made by **International Machine Tool Corp.**, Foster Div., 1114 Beardsley Ave., Elkhart, Ind.

▲ Mention Item NED-6509 when writing ▲

FLUORESCENT BALLASTS

Designed for multiple lamp application, No. 234-983 and No. 234-982 ballasts will operate three 40-watt and four 100-watt fluorescent lamps, respectively. It is claimed that in addition to conserving installation time and reducing power consumption, these units use minimum of critical materials. Approximately 50 per cent of copper, steel and iron normally used to build two ballasts each operating two 100-watt lamps is conserved in construction of one new four lamp ballast. Cost of latter is approximately that of one standard two-lamp 100-watt ballast.

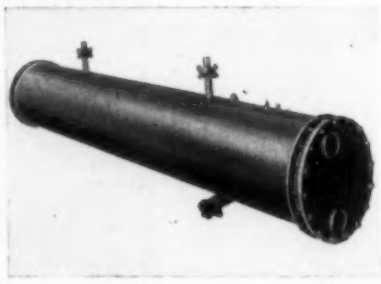


Through use of these multiple lamp ballasts, war production plants may increase production efficiency, lower operating costs and conserve critical materials. Four-lamp unit is designed for application on line voltages ranging from 250 to 280 volts and is applicable to circuits in 265/280-volt Y class. This latter circuit also results in reduction of copper required for plant lighting circuits. Made by **Jefferson Electric Co.**, 903 S. Twenty-fifth St., Bellwood, Ill.

▲ Mention Item NED-6510 when writing ▲

FREON CONDENSER

Water cooled, this type CW Freon condenser is built in eleven different sizes for varying capacities which range from 5 to 100 tons net refrigeration effect. Unit is equipped with Ball type valve for purging non-condensable gases. It is designed with fusible plug which has melting point of 230 degrees Fahr.



Condenser is constructed of seamless steel shell and steel tubes, with removable cast iron header which can be arranged for either series or parallel water flow. All prime surfaces have no fins, permitting removal and replacements of tubes if necessary. Tubes are rolled into tube sheets and soldered to insure permanent Freon-tight joints.

Unit is designed to conform with specification of Unfired Pressure Vessel section of A.S.M.E. Boiler Construction Code. It is tested under 300 pounds per square inch pressure, cleaned and dehydrated, and then sealed with 30 pounds per square inch pressure of dry inert gas before it is shipped. Made by **Westinghouse Electric & Mfg. Co.**, East Pittsburgh, Pa.

▲ Mention Item NED-6511 when writing ▲

METAL STAMPINGS

Correctly designed metal stampings provide the fabricator with superior parts that are usually more economical than parts formed in other ways.

Symmetry of line, balance, and length of performance are attributes of good design. Cold working of metals suitable for stamping increases their strength—usually without overstressing, but such over-stressing can readily be relieved. Practically all stampings are designed to develop strength, lessen weight, assure uniform section thickness and improve appearance.

Smoothness of surface which requires little or no finishing, and the broad choice of materials, makes stampings particularly applicable to a wide range of products. Commercial can form stampings from steel, stainless steel, Monel metal, aluminum, copper and copper alloyed metals and clad metals.

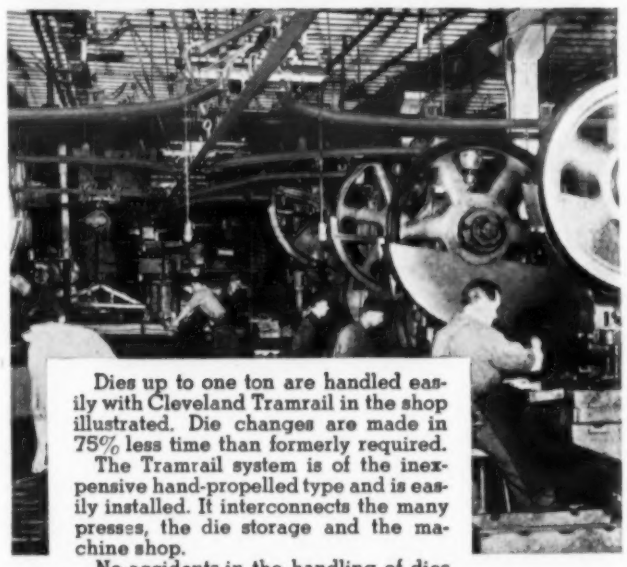
At Commercial, your problem will be handled by engineers and workmen thoroughly familiar with tool and die design and production equipment and methods that assure quality work in quantity production.

While quantity production usually makes for lower unit cost it is not necessary in connection with Commercial stampings, as they have a number of standard shapes available without die charges.

Send us details of your problem today . . . our engineers are at your service. **The Commercial Shearing & Stamping Co.**, Tod Lane, Youngstown, Ohio. —Advt.

▲ Mention Item NED-6512 when writing ▲

TIME FOR DIE CHANGES REDUCED 75%



Dies up to one ton are handled easily with Cleveland Tramrail in the shop illustrated. Die changes are made in 75% less time than formerly required.

The Tramrail system is of the inexpensive hand-propelled type and is easily installed. It interconnects the many presses, the die storage and the machine shop.

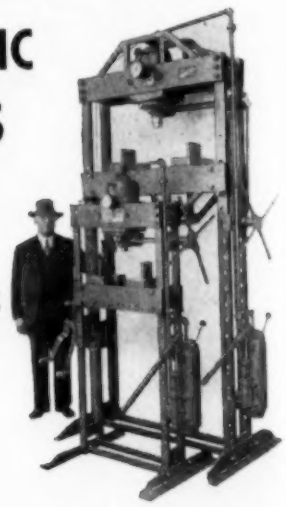
No accidents in the handling of dies and materials have occurred since this system was installed 4 years ago.

Write for booklet 2008. Packed with valuable ideas on materials handling.

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
1143 EAST 283RD ST. WICKLIFFE, OHIO.

▲ Mention Item NED-6513 when writing ▲

KRW HYDRAULIC ARBOR PRESSES *for War Production*



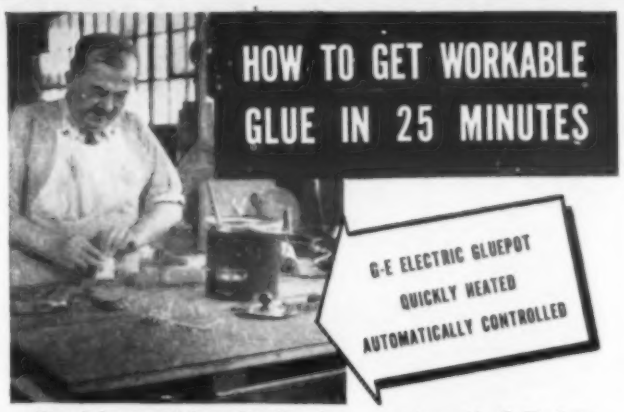
Standard Hydraulic Presses in 25, 50 and 75 ton capacities. Special Presses engineered for specific war production needs.

● **The exclusive design features which have given KRW Standard Presses their reputation for speed and efficiency are available to war production manufacturers who require presses of special design. The illustration shows a *special*, extra high 75 ton KRW Press in comparison with the Standard 25 ton unit.**

KRW also builds bench-type Arbor Presses in 1/2, 1 and 3 ton capacities.

K. R. WILSON
10 LOCK ST., BUFFALO, N. Y.

▲ Mention Item NED-6514 when writing ▲



For jobs requiring glue in a hurry, automatic G-E gluepots are your answer. You can depend on them for speed. Heat one quart to correct gluing temperature in only 25 minutes. Automatic control, too. Glue is kept at constant temperature accurately. Recommended for gluing patterns, ship models, designs which require use of wood and paper products, and similar applications.

Cat. No.	Quarts	Price
6A126	1	$18.00
6A111	2	$20.00
6A139	4	$24.00

For 115 volts; pots are also available at same price for 230 volts.

Order from a G-E distributor, our nearest office, or direct from General Electric Co., Schenectady, N. Y.

GENERAL ELECTRIC

▲ Mention Item NED-6515 when writing ▲

NEW SPEED
IN PRECISION GRINDING

Cellular structure of new Por-os-way wheel results in 2 to 5 times more production

The structure of Por-os-way is porous, like a sponge. The new bond is vitrified, tough. The millions of air cells cool between each grinding contact. Result: deeper cuts—.010″ or more! Or speeds 100% to 400% faster, increasing production per man per machine 2 to 5 times! Let us prove it to your satisfaction. Write for booklet and details of demonstration.

A. P. DE SANNO & SON, INC., 446 Wheatland St.
PHOENIXVILLE, PENNSYLVANIA, Since 1893
Offices and Warehouses in Principal Cities

*T. M. Reg. U. S. Pat. Off.
Copyright, 1942, A. P. de Sanno & Son, Inc.

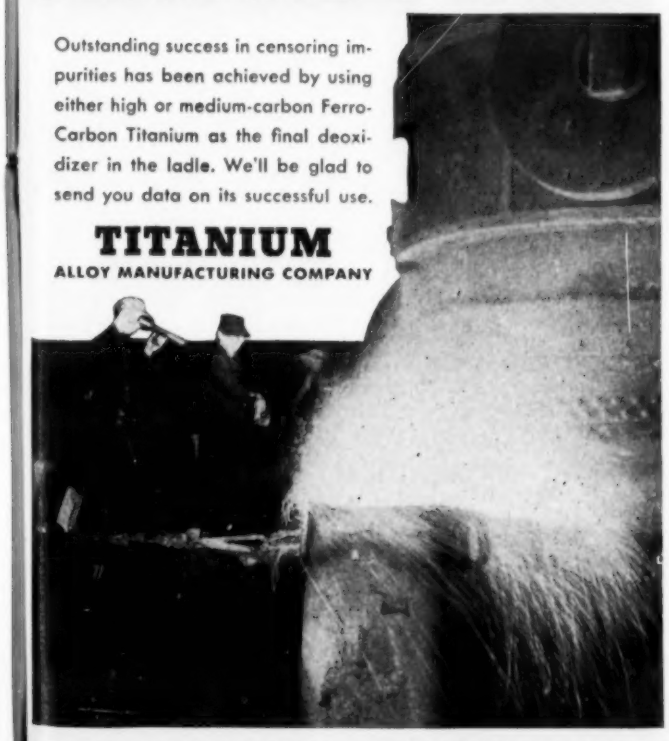
POR-OS-WAY* a new RADIAC* PRODUCT
ASK FOR A DEMONSTRATION

▲ Mention Item NED-6516 when writing ▲

CENSORSHIP IN STEEL

Outstanding success in censoring impurities has been achieved by using either high or medium-carbon Ferro-Carbon Titanium as the final deoxidizer in the ladle. We'll be glad to send you data on its successful use.

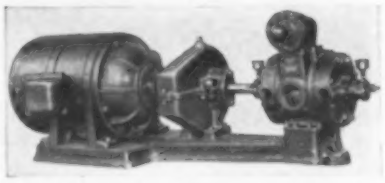
TITANIUM
ALLOY MANUFACTURING COMPANY



GENERAL OFFICES AND WORKS: NIAGARA FALLS, N. Y., U. S. A.
EXECUTIVE OFFICES: 111 BROADWAY, NEW YORK CITY

▲ Mention Item NED-6517 when writing ▲

STEAM JACKETED PUMP



Of simplified design, this steam jacketed pump is designed for handling such materials as palm oil, lard, tar, greases and similar liquids which must be processed or transferred while hot. Capacities range from 20 to 700 gallons per minute against pressures up to 300 pounds per square inch. They are furnished with either single or double reduction gear drive, and as single or multiple pump units.

Steam jacketed heads are made of cast steel, with threaded intake and exhaust steam ports, and drain plugs. They may be used with steam pressures up to 125 pounds per square inch. Sleeve bearings, which are standard, are grease lubricated and are located outside pump casing away from pumpage. Heavy bearing construction eliminates shaft whip and distortion.

Pumps for pressures in excess of 100 pounds per square inch are furnished with anti-friction bearings. Stuffing boxes are deep and are supplied with ample packing rings to assure tightness under all conditions. Stuffing box glands are of bolted type with back-off nuts which make repacking job simple operation. Made by **Blackmer Pump Co.**, 1976 Century Ave., Grand Rapids, Mich.

▲ Mention Item NED-6518 when writing ▲

COMMUNICATING SYSTEM

Assuring complete privacy when any two people are talking, this line of KS-60 Super Selective intercommunicating equipment is so designed that it is impossible for third party to "listen in" on either conversation from any other station in system. Illustrated is deluxe master station. System is composed exclusively of these master stations and permits number of two-way conversations to be held simultaneously without cross talk.

Masters can call one another regardless of whether station being called has power "on" or not. Systems may be built up progressively, beginning with two master stations to any number of stations desired. When auxiliary earphone is used, talk-listen switch does not have to be operated and unit functions in same manner as telephone. Volume for earphone may be adjusted.

Units have amplifier which delivers maximum output of 2¼ watts and permits operation with undiminished power with units as far removed from one another as 300 feet. Stations are available in systems ranging upward of two stations. Made by **Talk-A-Phone Mfg. Co.**, 1207 W. Van Buren St., Chicago, Ill.

▲ Mention Item NED-6519 when writing ▲

INDUCTION HEATING

Equipped with induction coils, this a.c.f. Berwick 60-cycle low voltage, low temperature heater uses standard transformer and is being employed to heat steel crankshaft 9⅞ inches long with 4¼-inch outside diameter. This shaft has tapering hole that starts out with 3¾-inch inside diameter. Heat of 400 degrees Fahr. is reached in approximately three minutes.

In top and lower ends of this shaft, frozen bushings are inserted. Expansion of 0.01 to 0.011 inch is obtained in part which is heated. This is sufficient to permit insertion of parts which must be fitted together with shrink fit.

Same type transformer, but rated at 150 kilovolt-amperes, is being used for heating axles. They are over 7 feet long by 4¼ inches in diameter. Entire axle is brought up to temperature of 500 degrees Fahr. in approximately one minute. This preheating is required procedure preparatory to welding parts onto axle. In this case, blocks on ends of lead are pressed firmly with air cylinders against ends of shaft. This is straight resistance heating and not induction heating. Transformers made by **American Car & Foundry Co.**, 36 Church St., New York City.

▲ Mention Item NED-6520 when writing ▲

MAXIMUM AIR RAID PROTECTION ... at minimum cost
When FEDERAL Sirens are Installed!

Maximum air raid protection, *at lowest cost*, is assured by powerful small sirens, closely spaced. The FEDERAL Type D Air Raid Siren (shown at left) is one of several types built especially for this service.

Write today for bulletin!

FEDERAL ELECTRIC CO., INC.
"Siren Headquarters"
8711 So. State Street Chicago, Illinois

▲ Mention Item NED-6521 when writing ▲

★ The "bugs" in a product can often be traced to improper springs. Therefore, work closely with Muehlhausen's experienced engineers and be sure of the *right* springs, correctly designed for every application—springs that will function accurately under all conditions—that may lower costs, save space, and improve the product's design. Write or wire your problem today. MUEHLHAUSEN SPRING CORPORATION, 550 Michigan Ave., Logansport, Ind.

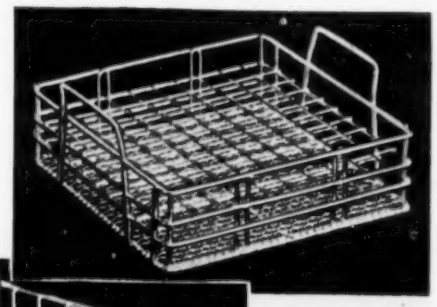
MUEHLHAUSEN SPRINGS
EVERY TYPE AND SIZE

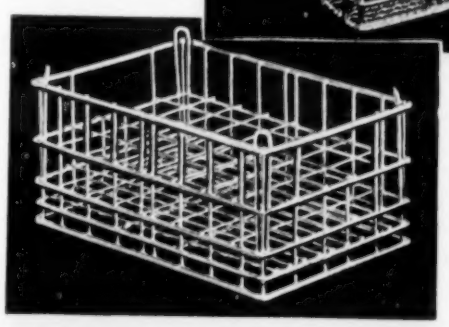
▲ Mention Item NED-6522 when writing ▲

BASKETS
OF ALL KINDS
Thousands made for projectiles and manufacturers of defense equipment

STOCK SIZES for 20 and 37 M/M Shells

ANY TYPE designed and supplied promptly





SAMPLES furnished on request

Specializing in Wire Baskets for 40 years

Write for folder B illustrating Wire Baskets of all kinds.

AMERICAN Wire Form COMPANY, INC.
267-277 Grant Avenue, Jersey City, N. J.

▲ Mention Item NED-6523 when writing ▲

The Velometer is a versatile direct reading air velocity meter which gives instantaneous readings in feet per minute.

The Velometer is ideal for measuring velocities and pressures at ducts, grilles, or registers. It offers the only convenient and satisfactory instrument for checking drafts, air leaks or velocities of ceiling outlets and similar air diffusers.

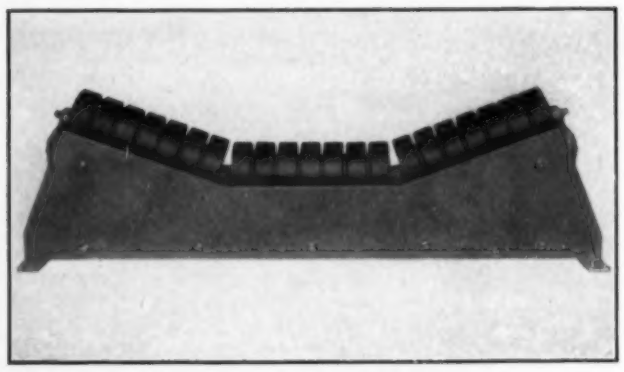
Standard ranges are from 20 F.P.M. to 6000 F.P.M. and up to 3 inches static or total pressure. Special ranges available as low as 10 F.P.M. and up to 24,000 F.P.M. and 20 inch pressure.

Anyone can use the Velometer. No mathematical calculations, no leveling—no timing.

Write for Bulletin No. 2448-D

Illinois Testing Laboratories Inc
430 N. La Salle St. Chicago, Ill.

▲ Mention Item NED-6524 when writing ▲



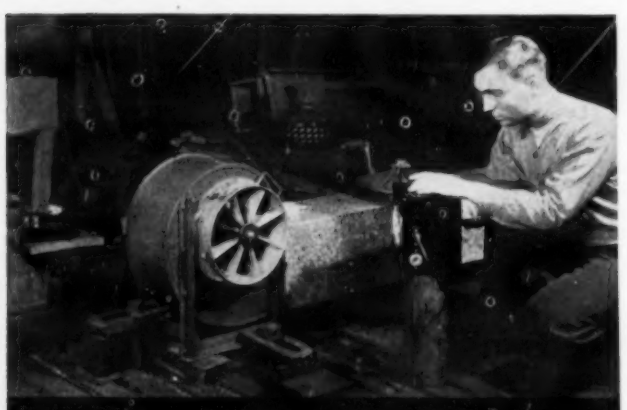
DON'T ABUSE YOUR CONVEYOR BELTING

Heavy, large, lumpy material falling as dead weight at loading points is cruel treatment for conveyor belting. Punctures may develop . . . life is surely shortened. Cushion that impact. Install Robins Rubberdisc Cushion Idlers at those loading points. The resiliency of these idlers absorbs the shock, relieving the belt from taking the force of these impacts—giving it a better chance to serve you longer. Send for leaflet "Cushion Idlers".

ROBINS
CONVEYING BELT COMPANY
PASSAIC • N. J.

FOR MATERIAL AID IN MATERIALS HANDLING *It's ROBINS*

▲ Mention Item NED-6525 when writing ▲



With The STROBOTAC

Profit by the experience of thousands of others . . . use the STROBOTAC to observe the exact operation of any machine or part at speeds even up to 100,000 rpm without stopping the machine being observed! The STROBOTAC allows you to see your equipment operating in s-l-o-w motion . . . as slow as a fraction of an rpm. In addition it is a direct reading tachometer calibrated in rpm from 600 to 14,400! The STROBOTAC, costing only $95, can help you. Let us tell you how!

Write For Bulletin 772

GENERAL RADIO COMPANY
Cambridge, Massachusetts

▲ Mention Item NED-6526 when writing ▲

CLAMPING PLIERS

Pressure is distributed uniformly over wide area by extended parallel jaws of these Knu-Lok parallel clamping pliers. This feature is claimed to particularly adapt tool for use in

operations involving gluing of plywood. They are being used widely by aircraft industry for clamping work incidental to construction of plywood gliders and training planes.

Two top spindles are threaded and equipped with lock nuts. This makes possible adjustment of openings so as to accommodate various thicknesses of assembled materials up to capacity of tool. Different thicknesses can be clamped simultaneously as result of adjustable feature. Operated with one hand, clamping action is applied readily. Pressure is held until released by toggle locking action. Made by **Knu-Vise, Inc.**, 16831 Hamilton Ave., Detroit, Mich.

▲ Mention Item **NED-6527** when writing ▲

DEHUMIDIFYING UNITS

Elimination of damage caused by high humidity, condensation, rust, mold, mildew and warping, as well as prevention of musty odors, can be effected by proper use of Dri-Air chemical powder in special containers. Powder absorbs moisture from air and keeps humidity in closed rooms or containers at minimum. Ten pounds of powder absorbs from 10 to 30 pounds of moisture from air, depending upon temperature.

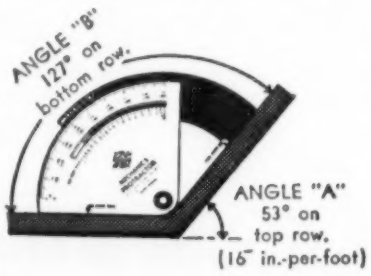
Two containers, both made of non-critical materials are available. Commercial tripod unit is designed for warehouse, factory or general store use. It has sturdy, treated wood tripod under which 10 pounds of powder can be suspended in mesh bag. Drippings from moisture absorbed are collected in bucket or pan.

Other unit is intended for store or office use. It has double mesh bags for holding powder and is finished in walnut. Built-in basin collects drippings. Both models will remove excess moisture from 1000 to 1200 cubic feet of space. Commercial unit sells for $3.75; office unit for $4.70. Ten pound bag of powder lists for 85 cents, or less in quantity lots. Made by **Tamms Silica Co.**, 228-30 N. LaSalle St., Chicago, Ill.

▲ Mention Item **NED-6528** when writing ▲

COMPACT PROTRACTOR

Measuring any angle up to 180 degrees, this Wolfe Mechanic's Protractor is designed for use by engineers, inspectors, mechanics, sheet metal workers, layout men and others engaged in similar work. Readings of outside angles can be taken directly. Inside angles can be determined either directly or through use of bevel as supplementary tool. Device is also calibrated so as to give pitch in inches-per-foot as compared with degrees up to 24 inches per foot.



Device is printed in red on 1/16-inch phenol-resin laminated birch. Calibrated markings are accurately milled and surface is lacquered for protection. Tool is not affected by grease or water. List price is $1. Made by **Interstate Sales Co.**, Dept. N, 1125 Broadway, New York City.

▲ Mention Item **NED-6529** when writing ▲

ZINC PLATED STEEL

Developed as satisfactory substitute for pure nickel, tin, chromium, aluminum or stainless steel, this electro-plated zinc on steel offers conservation of these critical metals. It is also stated as being more economical than other electroplated metals produced by this company.

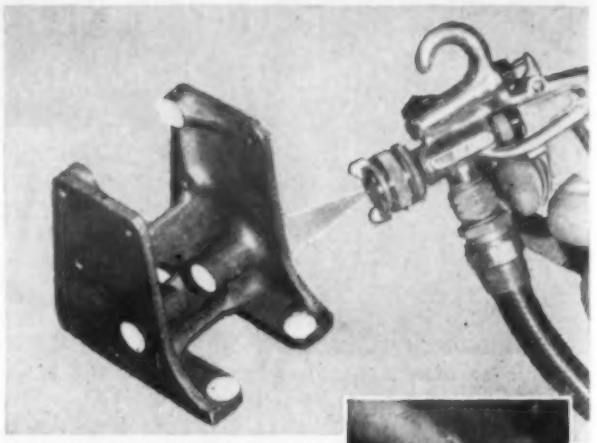
Steel is electroplated with zinc, producing coating which protects base metal and makes sheet highly resistant to corrosion and rust. It is stated that galvanic action takes place between zinc coating and steel which imparts additional corrosion resistance to base metal.

Zinc and steel bond well, forming coating which is easily workable in manufacturing processes. Material can be bent, stamped, formed, drawn, soldered and spot welded to meet most production requirements. Coating will not crack or flake.

Plated metal is furnished in sheets only, in sizes up to 36 x 96 inches, in full range of gages and tempers, with polished, unpolished and satin finishes. Thickness of coating can be varied to meet requirements and specifications of each application. Made by **American Nickeloid Co.**, 285 Bluff Ave., Peru, Ill.

▲ Mention Item **NED-6530** when writing ▲

NEW METHOD of MASKING



KUM-KLEEN STICKERS SPEED SMALL MASKING OPERATIONS

Kum-Kleen Masking Stickers, with the magic adhesive backing, are applied without moistening . . . adhere to all smooth surfaces . . . will not pop off . . . yet are easily peeled off. Are available in stock sizes or die cut to your specifications.

Send for samples. Write: Masking Dept., Avery Adhesives, giving sizes required.

Kum-Kleen
Easily Removed Masking Stickers

Avery Adhesives, Dept. NE 12, 451 E. 3rd St., Los Angeles, California. In Canada, Enterprise Sales & Distributors, Toronto

● TO APPLY—Simply Press On. No Moisture Required.

● TO REMOVE—Simply Peel Off.

▲ Mention Item NED-6531 when writing ▲

The (PIPING MAINTENANCE) Task Force

COMPLETES ITS MISSION THE FIRST TIME—EVERY TIME WITH KEY Graphite Paste

Leak-Proof Joints are quickly made up with Key Graphite Paste. It is the ideal sealer for thread and gasket connections on all lines to carry oil, gasoline and other petroleum products, and high-pressure steam.

Key Paste has no equal on sealing worn and battered fittings, as well as new. It expands when heated—packs up under pressure to fill out all irregularities . . economical to use—requires only water for thinning.

Get acquainted with all the advantages of Key Paste—

Send For FREE Sample. You can test Key Graphite Paste in actual service at *no* cost. Write for a liberal free sample, *today*.

KEY COMPANY
2601 McCasland Avenue East St. Louis, Ill.

▲ Mention Item NED-6532 when writing ▲

WAGNER

COMPLETE HYDRAULIC BRIDGE BRAKING SYSTEMS

Because of the high efficiency and dependability of Wagner Hydraulic Bridge Braking Systems, many of the large crane manufacturers have adopted them as standard equipment. • • You, too, can now have the many advantages and economies of Wagner Hydraulic Bridge Brakes on your present cranes. The complete system comes to you ready to install and includes everything necessary—brake assembly, brake wheel, master cylinder, wheel cylinder, copper tubing, flexible hose, brake fluid and all fittings. Complete information is contained in Bulletin IU-20. A copy will be sent upon request.

6477 Plymouth Ave. Wagner Electric Corporation St. Louis, Mo., U. S. A.

▲ Mention Item NED-6533 when writing ▲

SOLVING
Wartime Industrial
PAPER PROBLEMS

We are specialists in creating industrial papers to solve manufacturing problems and replace critical materials.

Example: One of the world's largest makers of electrical equipment asked us to improve a paper they were using—we designed a lighter, tougher paper that cut costs, improved the product and increased production.

FREE BOOKLET

Let us tackle your problem—there is no obligation. FREE BOOK — Samples and informaton on Flameproof, Anti-Tarnish, Grease and Moisture Resistant, Plasticized and other Industrial Papers. Write Dept. NB.

CENTRAL PAPER COMPANY, Inc.
MICHIGAN UNITED, WATERPROOF DIVISION
MUSKEGON, MICHIGAN
CREATORS OF CUSTOM BUILT AND SPECIALTY PAPERS

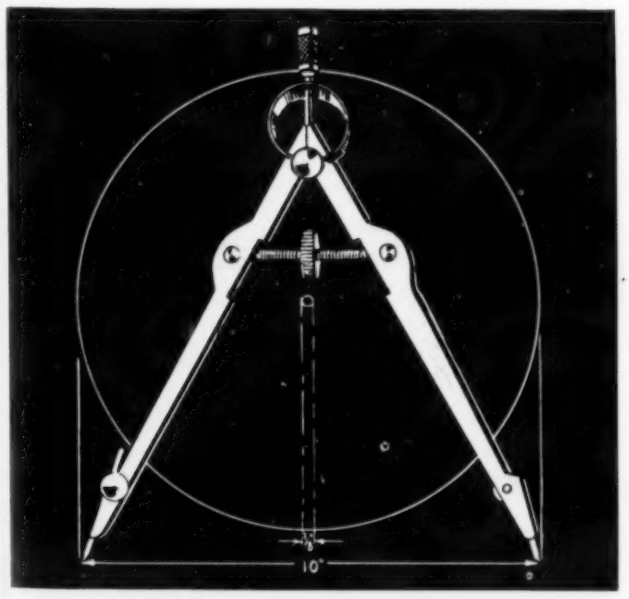
▲ Mention Item NED-6534 when writing ▲

Guard precious war drawings with this special-process tracing cloth

Mistakes mean delays! Give war jobs the best! That means specially-processed Arkwright Tracing Cloth. Arkwright is made by a highly technical method on costly machines. The surface is clear, smooth—never "humpy." Ink lines won't spread or "feather"—nor crack or chip in drying. Years from now, drawings will be fresh and clear—truly permanent! Guard your war work this way. Arkwright Finishing Company, Providence, R. I.

Arkwright TRACING CLOTHS
AMERICA'S STANDARD FOR OVER 20 YEARS

▲ Mention Item NED-6535 when writing ▲



with *One* Vemco Compass

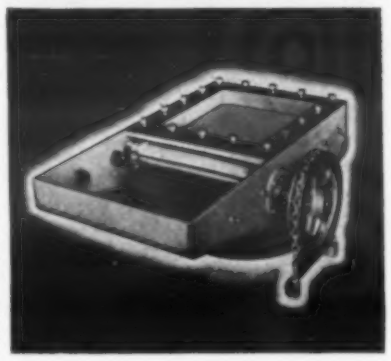
From 1/8" to 10", this large VEMCO Bow Pencil Compass will draw light or dense circles in pencil on paper, wood, or metal. Open truss design makes possible a reduction of 40% in the weight of this VEMCO over older types.

VEMCO instruments are available singly or in sets. See your dealer or write direct.

V & E MANUFACTURING CO.
PASADENA • CALIFORNIA

▲ Mention Item NED-6536 when writing ▲

CAST IRON COAL VALVES



Available in sizes ranging from 14 to 20-inch openings, this series of cast iron coal valves feature corrosion resistant construction. They are particularly designed for installation in chutes feeding coal to pulverizers or stokers.

Shaft and pinion assembly has dust-tight ball bearing rollers to support gate. Coal is prevented from clogging racks and pinions by U-shaped design of gate. Valves can be operated easily, even when discharge chute is plugged. All sizes are equipped with 12-inch rag wheel, chain guard and 10 feet of chain for remote operation. They can be furnished with smooth handwheel if desired. Made by **Beaumont Birch Co.**, 1501 Race St., Philadelphia, Pa.

▲ Mention Item NED-6537 when writing ▲

GRINDING COOLANT ADDITIVE

Added to coolant or water used in wet grinding operations, Ever-Drest is claimed to eliminate necessity for frequent wheel dressing and thus speed up production. Because material lowers surface tension of water, it permits particles of metal carbon and chips to settle off of wheel. This prevents them from being carried back onto wheel, keeping it clean and even-wearing at all times.

Product is also said to make it possible to grind with soluble oils. It prevents corrosion of finished surfaces by removing fingerprints and keeping surface of work in mild alkaline state. Grinding wheel does not become clogged or glazed, and even wear is assured.

One pound of material is added to each 5 gallons of coolant or water. Actual tests have been conducted to show increase in grinding efficiency. Made by **The Wolfe-Kote Co.**, 2224 N. Seventh St., Sheboygan, Wis.

▲ Mention Item NED-6538 when writing ▲

WOMEN'S SAFETY CLOTHING

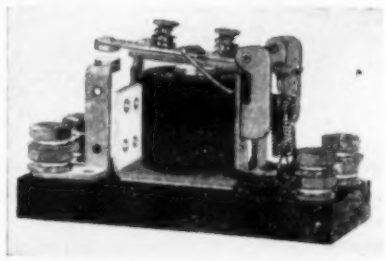
Designed especially for women welding operators, this complete line of safety clothing combines safety, durability and smart styling. Line is based on results of extensive industrial survey of safety requirements for women welders now employed and being trained in industry.

Leather sleeves, aprons, jackets, leather gloves, and special women's head and hair covering are featured in these garments. Head covering, designed by Sally Victor, one of country's leading milliners, protects hair from sparks and slag. It can be used with any of modern welding helmets.

All items in line are made of high quality material. They provide full protection for all parts of body, yet are comfortable and light in weight. New line supplements complete line of apparel for men welders. Made by **General Electric Co.**, Schenectady, N. Y.

▲ Mention Item NED-6539 when writing ▲

AIRCRAFT RELAY



Weighing only 6 ounces, this type B-2-A relay is designed primarily for aircraft, but is said to have numerous applications in other industries. Specifically developed for remote control of aircraft electrical circuits, unit is built to U. S. Army Air Force specifications. It has contact rating of 25 amperes continuous and 100 amperes surge at 24 volts direct current.

Single pole, single throw, normally open contacts are used. Manufacturer claims that unit has acceleration and vibration resistance of over ten times gravity. Metal parts are heavily plated to withstand 200-hour salt spray test. Made by **Guardian Electric Mfg. Co.**, Dept. B-2-A, 1626 W. Walnut St., Chicago, Ill.

▲ Mention Item NED-6540 when writing ▲

A "Simplified" HOBART is...
All Set in an Instant
...for any ARC WELDING job.

● It's as simple as tuning in your radio set. A turn of the master control wheel quickly gives your main welding range... small dial selects any one of a hundred settings within that range. Instantly, you get the right combination for any operation. That's the kind of "Simplified" control that speeds welds. Write today.

HOBART Bros. Co., Box NB 111, Troy, O.

New 1942 ARC WELDING MANUAL and ready-reference text.

A complete manual, showing latest techniques, methods and procedures. 5 days free inspection.

$2.00 Postpaid

ORDER YOUR COPIES NOW!

Please state PRIORITY RATING *when requesting particulars on Arc Welding Equipment...*

HOBART
"Simplified" ARC WELDERS

▲ Mention Item NED-6541 when writing ▲

hp

Make Audio Frequency Gain Measurements Without Extra Apparatus

The uses for this instrument in audio frequency work are two numerous to mention. It is ideal for making gain measurements because no auxiliary equipment is needed. Standardized frequencies and voltage are instantly available. You can make extremely accurate measurements with the utmost speed...

SAVE TIME, SAVE MONEY, SAVE ERRORS

Write today for more complete information. *-hp-* engineers are at your service. Give us details of your problem ... no obligation.

HEWLETT-PACKARD COMPANY
BOX 135 V STATION A • PALO ALTO, CALIF

▲ Mention Item NED-6542 when writing ▲

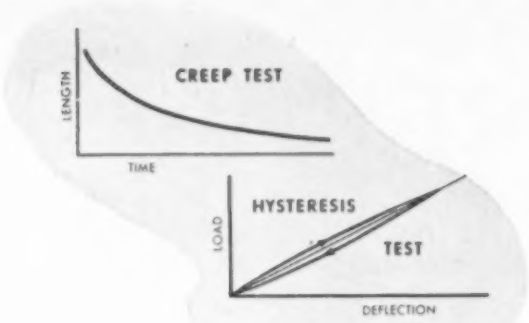
SPECIFICATION
Rubber Goods
FOR WAR PURPOSES

For specialized capability to economically and quickly produce made-to-order rubber goods, send your product problem to Seiberling. You can count on the prompt service and modern production facilities which have made Seiberling the dependable source for scores of leading manufacturers. May we supply you material and manufacturing recommendations with cost estimate for your rubber product requirement.

SYNTHETIC OIL RESISTANT TUBING
★
SYNTHETIC SPONGE RUBBER
★
RUBBER GOODS
MOLDED
EXTRUDED
DIPPED
★
Suitable Priority Required for Your Order Acceptance

SEIBERLING LATEX PRODUCTS CO.
DEPT. 5 AKRON, OHIO

▲ Mention Item NED-6543 when writing ▲



"CREEP" may be a SABOTEUR

The "creep" chart shown is a graphic record of the exact change in length of a spring subjected to a static load. "Creep" influences the operation of spring-actuated machines, can jeopardize the lives of men in the armed forces. By the development of a Hunter designed and built supersensitive motion recorder, Hunter charts creep, hysteresis (also shown above), and the elastic recovery of springs, knows how to keep them under control. There is only ONE right spring for the job. Hunter will make it to your specifications or design it for you.

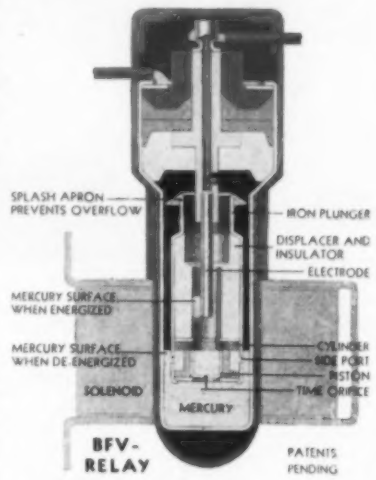
HUNTER PRESSED STEEL CO., LANSDALE, PENNSYLVANIA

HUNTER
Science in Springs

▲ Mention Item NED-6544 when writing ▲

MERCURY RELAY

Adaptable to modern communication systems, such as telephone and signal work, this series BFV time relay is operated by non-oxidizing pressure atmosphere of inert gas. Flaming is eliminated and time settings remain constant. This particular unit delays its action upon closing of control circuit and after such delay closes main line circuit. Upon opening of control circuit, main line follows instantly to an open position.



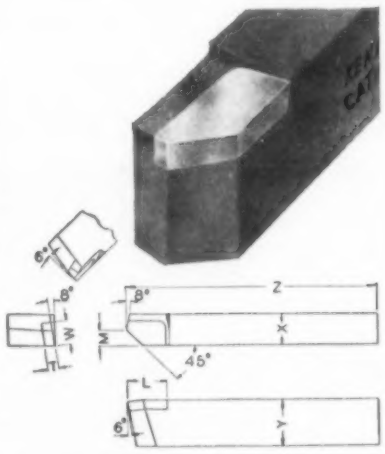
Seventy-five ampere capacity in "C" model is now available. Model "B", illustrated, has maximum capacity of 30 amperes. These relays cool, quench and preserve their contacts as they operate. They are explosion-proof and may be used anywhere.

Units can be used in machines, motors and electrical circuits where time intervals are required at beginning or at end of cycle. Unit also lends itself readily to recycling operations or flasher actions. Product is recommended where dust and dirt are present because hermetically sealed mercury time relay is unaffected by elements which ordinarily oxidize and disintegrate contacting materials. Made by **Durakool, Inc.**, 1051 N. Main St., Elkhart, Ind.

▲ Mention Item NED-6547 when writing ▲

CARBIDE TOOLS

Styles 39 and 40 Kennametal steel-cutting carbide tools combine lead angle or side cutting angle with a tip for longer than average carbide tools having lead angle. Style 39, as illustrated, and opposite hand style 40, not shown, are considered as standard in line of tools.



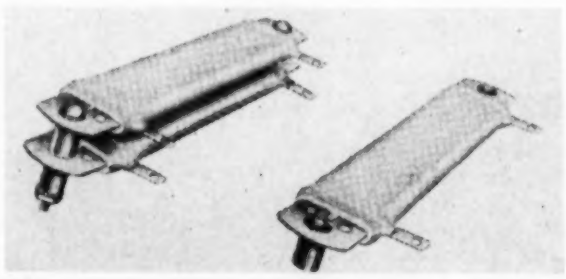
These tools are particularly economical in shell turning operations because only edge on lead angle is sharpened and it is easy to maintain control position of nose as tool is reground. They are being used widely in shell turning where uniform forgings permit depth of cut never to exceed length of tip having lead angle.

Chip breaker is ground only on section parallel to this lead angle. Tools, which are available in sizes of ⅛ x 5/16 x ⅝ inch to ⅜ x ¾ x 1½ inches, may also be used for chamfering operations. Made by **McKenna Metals Co.**, 171 Lloyd Ave., Latrobe, Pa.

▲ Mention Item NED-6548 when writing ▲

STRIP TYPE RESISTORS

Having application in aviation, radio and installations where space limitations and high unit space-watt ratings are important requirements, these Vitrohm strip resistors employ strong flat



refractory core for resistance wire winding. Terminals are mechanically banded and spot welded in position on core. Core and winding are then sealed in fused-on Vitrohm enamel.

Each unit is fitted with self-sustained mounting bracket and spacer. These spacers and end brackets are riveted to metal strips that extend through core. They provide additional heat radiating facilities.

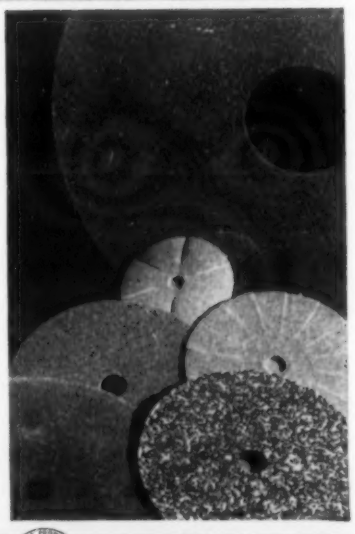
Several sizes of product are available, ranging from 1¼ inches to 6 inches in length with ratings of 30 to 75 watts for two terminal resistor. Units can be furnished with two or more terminals which may be of light medium type. Made by **Ward Leonard Electric Co.**, 51 South St., Mount Vernon, N. Y.

▲ Mention Item NED-6549 when writing ▲

A leading furnace manufacturer says: "Following a test we now use 'SILVER STREAK' DISCS EXCLUSIVELY for grinding welds and smoothing seams"

Eager, as no doubt *you* are, to speed up grinding and get better results at less cost, this company ran a test on "Silver Streak" Abrasive Discs. Results tallied exactly with what other users have found. AP's exclusive insulating process makes "Silver Streak" Discs cut faster, more uniformly. They stay *sharp, cool* and *on the job longer*, even when temperatures go up to 1700° . . . a killing heat for many abrasives!

Try this radically different abrasive on your own jobs! We'll supply samples FREE if you'll tell us your toughest problem. Write Abrasive Products, Inc., 525 Pearl St., So. Braintree, Mass.



ABRASIVE PRODUCTS INC.
SOUTH BRAINTREE MASSACHUSETTS
JEWELOX • JEWEL EMERY • JEWEL GARNET JEWELITE • JEWEL FLINT • NEW PROCESS

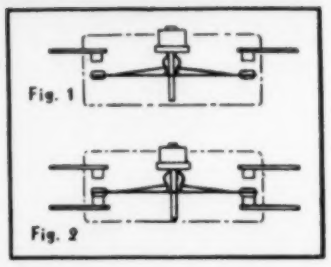
▲ Mention Item NED-6545 when writing ▲

NEW G-E MULTICIRCUIT SWITCH

Provides One-hand Control of 20 Aircraft Electric Circuits

TWO FORMS AVAILABLE

These multicircuit switches are made up of either single-circuit Switchettes (Fig. 1), or two-circuit Switchettes (Fig. 2) mounted in pairs for the control of 8 to 20 circuits. The single-circuit form provides one normally open circuit; the two-circuit form provides both one normally open and one normally closed circuit.



Get New Catalog on Our Full Line of Aircraft Electric Controls. Write Dept. H 676-77J General Electric, Schenectady, N. Y.

GENERAL ELECTRIC

▲ Mention Item NED-6546 when writing ▲

—just TRY 1

MOCCASIN BUSHING *on your most* **TROUBLESOME BEARING**

The success of Moccasin Bushings' efficiency lies in their unique lubrication principle. Oil is drawn from a reservoir in the bearing housing and is distributed by capillary action in a continuous, unbroken film over the entire bearing surface. Drippage and seepage of oil is entirely eliminated, and under ordinary circumstances they require attention only two to four times a year—just try one on your most troublesome bearing. Guaranteed for satisfactory service.

Moccasin BUSHING COMPANY
CHATTANOOGA, TENNESSEE

▲ Mention Item NED-6550 when writing ▲

STOP THAT DRIP

No More Damage from Condensation or Sweating Pipes, Tanks, Walls, Ceilings and Air Ducts

A SURE CURE

NoDrip

● This sensational plastic cork coating prevents condensation drip from metal, concrete, brick, wood, plaster or composition. Permanently protects metal against rust and corrosion, thus prolonging life of pipes, tanks, etc. Forms a moisture-proof, insulation type coating impervious to acid and alkali.

Stucco-like finish requires no maintenance and can be painted any color. A gallon covers about 30 feet of 1" O.D. pipe. Comes in 1, 5 and 55 gallon drums. Immediate Shipment. Order from your Supply House.

Write for NoDrip Handbook.

J. W. MORTELL CO.
Technical Coatings Since 1895
526 BURCH STREET KANKAKEE, ILL.

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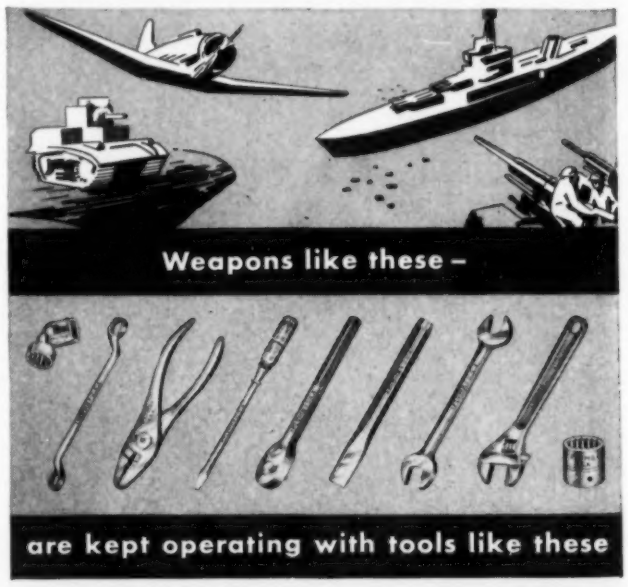

The Plomb Tool Company is one of the world's largest manufacturers of fine forged hand tools

PLOMB TOOL COMPANY • LOS ANGELES, CALIFORNIA

To meet war needs 31 FACTORIES make them
PLOMB Streamlined Tools

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Rawhide HAMMERS MALLETS

Carefully made, accurately balanced, with weighted heads where extra striking power is needed. Strike forceful blows without marring or battering, without recoil or bounce. Never split, chip, "smear" or crack, retain this true striking face so every blow goes right to the target... gets work done. Long wearing, mechanically cured, coiled Rawhide faces far outlast soft metals, plastics, wood or rubber.

Replaceable Heads

Replaceable Insert Faces are available for C.R. Hammers... make each a "lifetime" tool.

CHICAGO Rawhide MFG. CO.
1287 ELSTON AVE. ★ CHICAGO, ILLINOIS.

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Something You Need to Know About Belts

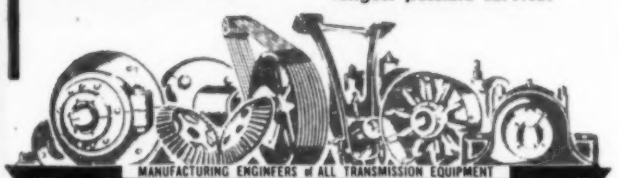
Cable-Core V-BELTS FOR LONG LIFE PRODUCTION

NEW BLACK JACKETS
"Neutralized" Cable-Cores
Uniform Flexibility
Tailored to the Grooves

Free Catalogs on Request

V-Belts of outstanding strength and durability — with new black jackets that "Grip the Grooves" for a surer, more dependable power drive.

Neutralized, cable-like cords assure utmost flexibility with minimum deterioration . . . for longest possible service.



MANUFACTURING ENGINEERS of ALL TRANSMISSION EQUIPMENT
MEDART
THE MEDART CO. 3550 DeKalb St. ST. LOUIS, MO.

▲ Mention Item NED-6554 when writing ▲

ARMY E NAVY

"... An Army-Navy Production Flag flying above a factory or a mine will bear witness that management and labor there are doing their utmost to help their Army and Navy to win the war..." — FRANKLIN D. ROOSEVELT

AWARDED OCT. 24, 1942

Schauer Speed Lathes

SCHAUER Speed Lathes are for fast production work—POLISHING, LAPPING, and BURRING of gears, pinions, spark plugs, and similar products. Replace bigger and more expensive lathes used for secondary finishing. For faster production and more economy use SCHAUER Speed Lathes. Send for Catalog No. 420.

"the originators of today's Speed Lathes"

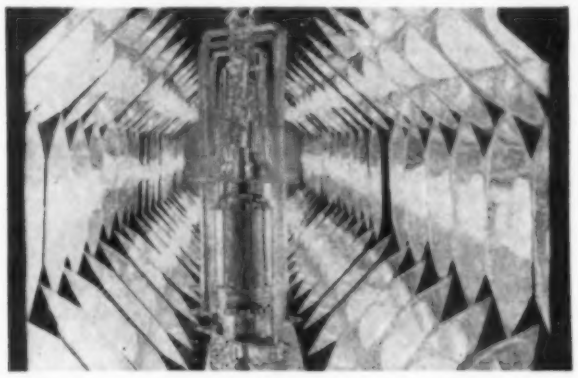
SCHAUER MACHINE COMPANY
2063 Reading Road Cincinnati, Ohio

▲ Mention Item NED-6555 when writing ▲

NEW Applications

INFRA-RED DRYING

Since introduction of near infra-red process for industrial applications, many uses of radiant energy are being developed in various branches of the electric motor industry. Initially,



electric motor repair shops found that by properly arranging a few reflectors or certain small tunnel arrangements, near infra-red lamps provided economical method of drying out and baking insulating varnish on various sizes of armatures, stators and coils. Time savings up to 50 per cent have been reported.

Satisfactory experiences in this field have led motor manufacturers to adapt this process for large scale production. There is evidence that both manufacturing and maintenance branches of the electric motor industry will be using infra-red.

Accompanying illustration shows armatures being baked at Leece-Neville plant. After installation of infra-red equipment in armature division to bake insulating varnish, other departments "swamped" them with additional drying and baking jobs. It became necessary to install duplicate equipment to handle these extra requirements.

Variety of armatures, suspended from overhead conveyor, are baked in average of 50 minutes. Generator housings, after being completely assembled, are sprayed with black finish and baked in same tunnel in 27 minutes. Full information on this process available from **Fostoria Pressed Steel Corp.**, 1240 Harris Rd., Fostoria, Ohio.

▲ Mention Item NED-6556 when writing ▲

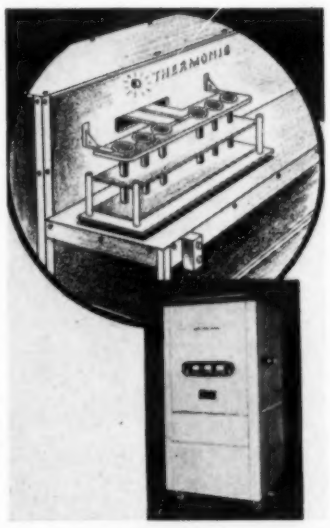
MOTOR INSULATION

Having both mechanical and electrical strength, Spauldo insulation is intended for use in motors. It is also applicable to wide range of other insulating uses. Material is 100 per cent rag content and chemically pure. It is tough, dense and resistant to tearing. In addition to being readily workable, material will stand extreme forming.

Spauldo insulation is available in rolls, in continuous form. It is claimed to have same density and ply adhesion as are found in sheet stock. Being in roll form, it can be used on production machines which cut, form and cuff in single operation. Made by **Spaulding Fibre Co.**, 310 Wheeler St., Tonawanda, N. Y.

▲ Mention Item NED-6557 when writing ▲

SHELL BRAZING



In fabricating burster casings for chemical shell, silver brazing operation is necessary in joining and sealing screw machine part to tube. Solution of this problem is effected by using single inductor type coil which heats six units simultaneously in 30 seconds when energized from 20-kilowatt, model 1070 Thermonic Induction generator. Equipment consists of two-coil setup. Coils are energized alternately, permitting one to be emptied and reloaded while other coil is brazing.

Using frequencies in order of 400,000 cycles per second, high energy transfer between coil and work is obtained. Resultant heat pattern permits brazing alloy to flow and form strong, gas tight joint. This setup affords continuous flow of production at rate of approximately 720 units per hour. Skilled labor is not necessary. After preliminary adjustments, operation is automatic.

Temperature is controlled exactly to desired area, with no annealing beyond and no metallurgical change. Strength of braze is claimed to be as high or higher than original metal. Joint is free from internal oxidation, reducing need for cleaning or finishing operations. Induction heating equipment made by **Induction Heating Corp.**, Dept. G, 389 Lafayette St., New York City.

▲ Mention Item NED-6558 when writing ▲

where you want them
when you want them

The portability and flexibility of Delta machines open many roads to increased production: Here illustrated are two 14-inch Delta Drill Presses set up alongside a screw machine. Operator performs two hand-feed operations on drill presses while waiting for power-feed on screw machine. Full details will be furnished on request on many other cases where Delta portability and flexibility have been utilized to solve production problems.

DELTA MILWAUKEE

Send for FREE "Tooling Tips" showing how other manufacturers are taking advantage of DELTA-Milwaukee machines. Get in touch with your Delta Industrial Distributor or write to The Delta Manufacturing Company, 616-N E. Vienna Ave., Milwaukee, Wis.

▲ Mention Item NED-6559 when writing ▲

Every Man, Woman and Machine at
CRESCENT

is working 100% to keep the Light of Freedom burning!

CRESCENT INSULATED WIRE and CABLE CO.
TRENTON, N. J.

▲ Mention Item NED-6560 when writing ▲

TOOL HOLDERS and TOOLS

ARMSTRONG TOOL HOLDERS are the standard on lathes, planers, slotters and shapers. The same extra strength, superior design, balance and fine tool quality that has put ARMSTRONG TOOL HOLDERS in over 96% of the Machine Shops and Tool Rooms is found in ARMSTRONG WRENCHES, ARMSTRONG "C" CLAMPS—in all ARMSTRONG TOOLS. Each Armstrong line is complete in sizes and types with every tool the finest of its type.

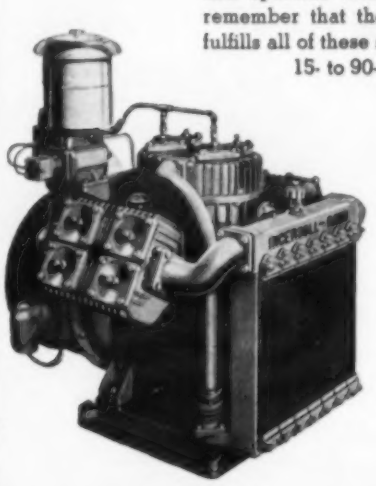
Write for Catalog C-39—250 pages of fine tools

ARMSTRONG BROS. TOOL COMPANY
"The Tool Holder People"
307 N. Francisco Avenue, Chicago, U. S. A.
Eastern Sales Office: 199 Lafayette St., New York

▲ Mention Item NED-6561 when writing ▲

The MOTORCOMPRESSOR

When you need an air compressor which requires but little attention, that is compact, that is easily relocated and operates without cooling water, remember that the Motorcompressor fulfills all of these specifications in the 15- to 90-hp range.



- AIR-COOLED — No danger of freezing
- TWO-STAGE COMPRESSION — High efficiency
- TIMKEN ROLLER BEARINGS — Need but little attention

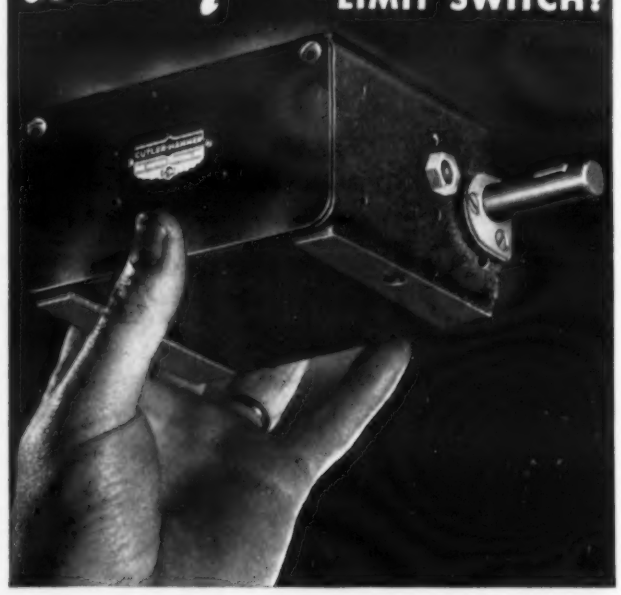
Write for Form 3166

874-1

Ingersoll-Rand
11 BROADWAY, NEW YORK CITY

▲ Mention Item NED-6562 when writing ▲

NEED A Widely Adjustable LIMIT SWITCH?



Tripping points adjustable between ½ turn and 100 turns of shaft on C-H Bulletin 10316 Type J Rotating Shaft Limit Switch

● This simple, rugged, geared type limit switch (Cutler-Hammer Bulletin 10316 Type J) serves many purposes, meets many needs because of its wide range of adjustment. Tripping limits may be set from ½ a turn apart all the way up to 100 turns apart in increments of 1/20 of a turn. Changing the tripping points is done easily by hand.

Small, easily wired and mounted, with a 1½ inch shaft extension for direct connection to machine drive, the C-H Bulletin 10316 Type J Limit Switch is ideal for a wide range of applications, including the opening and closing of plant, garage and hangar doors and windows; conveyor deflectors, dumb-waiters, hoists, machine tools, reversing machines and rapid traverse drives. Write for a descriptive bulletin...CUTLER-HAMMER, Inc., 1377 St. Paul Avenue, Milwaukee, Wisconsin. *Associate:* Canadian Cutler-Hammer, Ltd., Toronto, Ont.

Other Features of the C-H Bulletin 10316 Type J Rotating Shaft Limit Switch

- For use in control circuits of A.C. or D.C. Magnetic Starters.
- Mounts and works in any position.
- Quick resetting mechanism. Resets in ⅛ of a turn after tripping.
- Unlimited overtravel in either direction without damage.
- Normally closed contacts at each limit.
- Single pole, positive make and break, double break silver-to-silver contacts.

CUTLER-HAMMER
MOTOR CONTROL
C-H
1892 1942
50th ANNIVERSARY

▲ Mention Item NED-6563 when whiting ▲

NEW Processes AND Materials

GREASEPROOF WRAPPING

Developed to meet government specifications calling for greaseproof wrapping of all metal parts furnished either by prime or sub-contractors, Ordnance Greaseproof paper has grease resistance of not less than minimum average of 600 seconds penetration by turpentine. It has pH range of 6.5 to 7.5.

Common base weights are 25 and 40 pounds, but material can be supplied in any desired base weight. It is available either plain or waxed to form moisture-vaporproof barrier in accordance with specifications of paragraph 83-4-b of Ordnance Field Service Manual which sets forth instructions and specifications for packaging ordnance general supplies.

Material is also stocked in 25-pound weight laminated to 30-pound neutral Kraft paper for uses requiring greater strengths or where waxy surface may not be desirable. Other laminated combinations can be supplied on order to meet special needs. Made by **E. W. Twitchell, Inc.**, Packaging Div., Public Ledger Bldg., Philadelphia, Pa.

▲ Mention Item NED-6564 when writing ▲

DRAWING INK

Available in twenty waterproof colors, Justrite drawing ink is claimed not to cake in bottle, on brush or pen. It flows freely and does not feather. Full opacity is retained in both black and white colors, other colors in line are brilliantly translucent. Ink is particularly designed for drafting, as well as for art work.

Though in use for over two years by governmental agencies, this ink is just being offered to general public. Interested draftsmen or engineers may receive sample bottle free by writing directly to manufacturer, giving occupation and company connection. Made by **Louis Melind Co.**, 364 W. Chicago Ave., Chicago, Ill.

▲ Mention Item NED-6565 when writing ▲

MACHINING COOLANTS

Instantly emulsifying in all proportions in cold water, A.M. base cutting coolant is non-alkaline, clear, claret colored oil which is used as base to be mixed with water for machining aluminum sand castings, zinc and aluminum die castings and soft metal alloys. On difficult machining jobs, 1 part of base is used with 6 to 10 parts of water. For average machining jobs, 1 part of base is used with from 15 to 30 parts of water.

Also available for difficult machining of aluminum sand castings, as well as zinc and aluminum die castings, and soft metal alloys, A.M. Base No. 11 concentrate is mixed with light or medium petroleum oil to act as coolant and lubricant. It is particularly adaptable for machining hard metals, including silicon alloys. It has extreme wetting and lubricating power.

Both bases are claimed to give excellent finish, keep work cool, insure long tool life and will not injure metal or operator. Made by **Quaker Chemical Products Corp.**, Conshohocken, Pa.

▲ Mention Item NED-6566 when writing ▲

TRAFFIC ZONING PAINT

Applicable to wood, concrete, stone, asphalt, wood blocks, composition and cement, this traffic zoning paint can be used for marking traffic lines or directions on factory floors, parking lots, streets and airports. It is claimed to have extreme durability under industrial truck, automobile, machine and foot traffic. In addition it is resistant to stains. (This product was described in Item NED-4971, Oct. 1942, but carried an incorrect title. Editor.)

Paint dries for traffic in 15 to 20 minutes, eliminating any extended work stoppage. Special primer is furnished for use on cresote blocks to stop bleeding. Material may be applied by machine or hand brush. It gives clean, scuff-proof line. Available colors are white, yellow and special shades. It is shipped in 1, 5 and 55-gallon containers. Made by **Thomson-Porcelite Paint Co.**, 829 N. Third St., Philadelphia, Pa.

▲ Mention Item NED-6567 when writing ▲

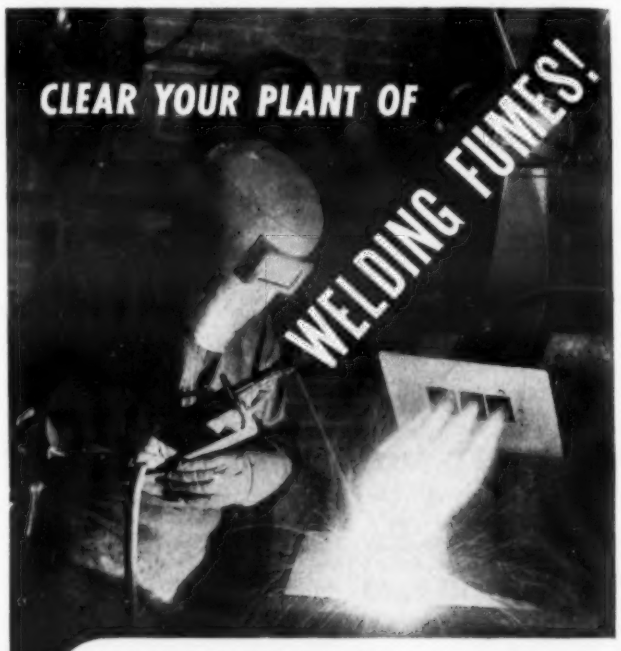
Wham! TWELVE TIMES PER SECOND • • • 90 MILES PER HOUR

TO MEET WAR PRODUCTION NEEDS

Jeffrey Miracle Hammer Crusher . . a big primary reduction machine for a big job in war-production plants where critical materials such as carbide, chemicals, etc., must be reduced in a hurry to desired size. Large feed opening—massive construction—built for the tough jobs. Jeffrey crushers and pulverizers meet new demands for a sized product . . a size and type unit for each reduction problem.

The Jeffrey Manufacturing Co.
952-99 North Fourth St. Columbus, Ohio

▲ Mention Item NED-6568 when writing ▲



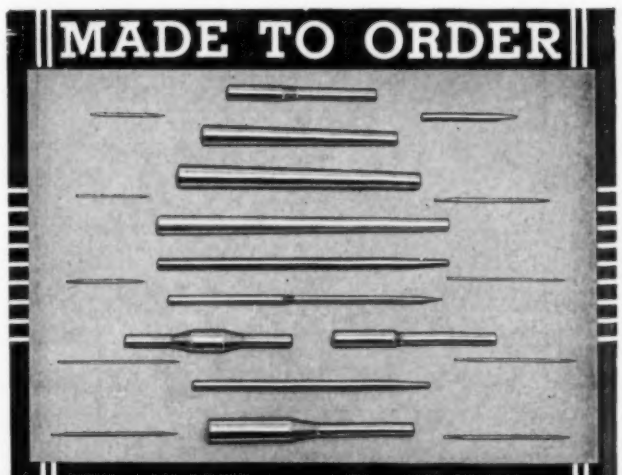
GUARD EMPLOYEE HEALTH by installing Ruemelin Fume Collectors wherever welding operations take place. They remove noxious gases, heat and smoke at the source . . . eliminate employee fatigue . . . speed up welding operations. Especially valuable in winter when doors and windows must be closed. Hundreds in operation all over the country. Write for bulletin No. 37-C.

RUEMELIN MFG. CO., 3883 N. Palmer St., Milwaukee, Wis.

RUEMELIN FUME COLLECTOR

▲ Mention Item NED-6569 when writing ▲

MADE TO ORDER



Tubes, Rods, Wire reduced by rotary swaging to your specifications by the pioneer rotary swaging machine builder.

Cuts show various tubes reduced, tapered and closed on end by swaging. Solid work up to ⅝" diameter and medium wall tubing up to 2½" O. D. can be handled.

You benefit from our nearly seventy years' rotary swaging experience.

The Torrington Company
SPECIALTY DEP'T.
Torrington, Conn., U.S.A.

▲ Mention Item NED-6570 when writing ▲

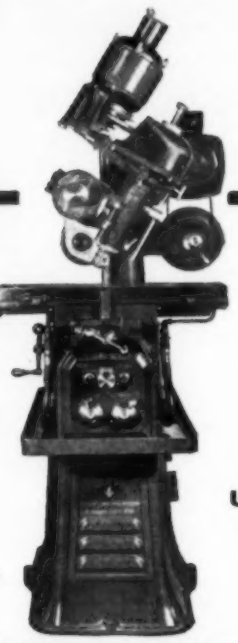
THE COMMANDER

A BLITZ WAGON TO DO THE SWEEPING

Here is one piece of equipment, the equal of a whole crew of sweepers—to blitz your cleaning problems. . . . Consistent with modern shop practice, men with brooms are rapidly being replaced with this mechanized method. One MOTO-SWEEPER can do the work that formerly required many men—releasing them to help speed the wheels of production. And relieving still further the burden of non-productive labor. . . . Efficient, rugged and easy to operate, in large or small areas—it turns right or left under its own power by means of a separate clutch on each wheel of the tractor, controlled at the handlebar (patented). . . . Send for catalog and complete information . . . 3 models (two motorized) . . . prompt deliveries on high priorities.

THE MOTO-MOWER COMPANY
Industrial Sweeper Division
4590 WOODWARD AVENUE • DETROIT, MICH.

▲ Mention Item NED-6571 when writing ▲



ARMOR UNIVERSAL TURRET MILL

NO OTHER MILLER HAS ALL THESE FEATURES

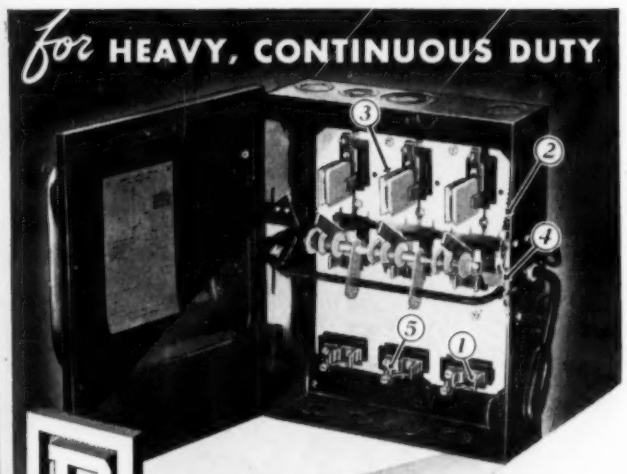
1. Hydraulic Feed. **2.** Hand Feed. **3.** Vertical and Angle Spindle. **4.** Horizontal Spindle. **5.** 3 High Spindle Speeds. **6.** 3 Low Spindle Speeds. **7.** Revolving Turret. **8.** 16" Vertical Travel. **9.** 16" Longitudinal Travel. **10.** 8½" Cross Travel.

Entire tolerances held to less than .001

AIRCRAFT MACHINERY CORPORATION
BURBANK, CALIFORNIA

▲ Mention Item NED-6572 when writing ▲

for **HEAVY, CONTINUOUS DUTY**



SAFETY SWITCHES

1 • Positive Pressure Fuse Clips
2 • Compression Spring
3 • Square D Arc Suppressors
4 • Keyed Interlock Mechanism
5 • Solder-Solderless Connectors

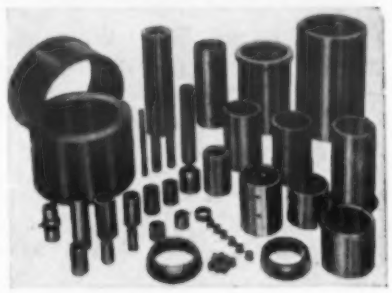
Write for Bulletin No. 500 which gives complete and illustrated details of these five and other important Square D features which mean longer life and better service.

SQUARE D COMPANY
DETROIT-MILWAUKEE-LOS ANGELES
KOLLSMAN INSTRUMENT DIVISION, ELMHURST, NEW YORK
IN CANADA: SQUARE D COMPANY CANADA LIMITED, TORONTO, ONTARIO

▲ Mention Item NED-6573 when writing ▲

New Processes & Materials

MOLDED FABRIC BEARINGS



Made of various material combinations to suit demands of different service conditions requiring use of grease or oil lubrication. Lubritex bearings are offered to alleviate shortage of critical bearing metals. These non-metallic molded fabric bearings are oil lubricated.

According to manufacturer, these bearings are replacing conventional bearings with satisfactory results on all types of service. They will withstand impact loads which would break metal bearings, and are claimed to have longer wear life and lower friction. They will not score journals, even if lubrication fails for limited periods.

Bearings are engineered for particular applications and are molded to finished dimensions in all shapes and sizes for replacing metal bearings. Made by **Gatke Corp.**, 167 W. Wacker Dr., Chicago, Ill.

▲ Mention Item NED-6574 when writing ▲

DURABLE PLASTIC

Light in weight but sturdy, this plastic composition can be used instead of steel and other metals for many purposes such as structural members, pipe, wall panels, air conditioning ducts and corrugated sheets. Material has been developed in conjunction with Hercules Powder Co. and is made from vegetable fibers and resin from Southern pine trees. One manufacturer is making 3-inch plastic tubing to replace steel pipe in oil field exploration.

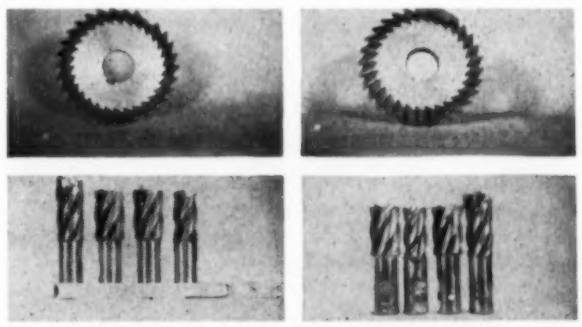
Considerable experimental work is under way for containers for oils, greases and food shipments; table tops; furniture; trays, refrigerators, lockers; radio antennae; vent pipes, fluorescent lighting fixtures and automobile license plates.

Resin treated fiber is produced in sheets on standard paper making machinery. These sheets are hydraulically pressed together to make compositions which are hard, dense and stiff, but not brittle. Plastic pipe is light enough for one man to balance seven 10-foot lengths on his shoulder with ease. Pipe is strong enough to support weight of three men. Plastic made by **The Patent & Licensing Corp., Dept.** NED, 30 Rockefeller Plaza, New York City.

▲ Mention Item NED-6575 when writing ▲

TOOL RECLAMATION

High speed tools which have been broken or worn beyond point of possible use can be reclaimed and restored to service by this Suttonizing method of welding. This process makes



possible conservation of vital alloy tools of tungsten and cobalt, which in normal circumstances would be discarded when broken. Cutters, drills, reamers, broaches and similar high speed steel tools are reclaimed.

This special process is employed to repair teeth, flutes, tangs, shanks and fractures in all types of cutting tools. In most cases it is not necessary to heat treat tools after repairs have been effected. This feature insures maintenance of original alignment in cutter. Suttonizing is welding process and differs from insert methods in that metals added become integral part of reclaimed tools. This reduces possibility of subsequent rebreaking.

Method is claimed to provide means of combining cutting qualities of conventional high speed steel with abrasive resistance about equal to that of tungsten carbides. Deposits are homogeneous and will match or excel original hardness of tool being welded. In addition to application for cutting tools, method can be used on tools such as lathe centers, centerless grinder rests and spinning tool to afford abrasion resistance only.

Illustration shows before and after views of typical cutting tools which have been repaired by this method. Process can also be employed for composite construction of such tools as lathe, planer, boring, cutoff, shaper and special shaped forming tools. Cutting surfaces of readily procurable S.A.E. steels are face with required special alloy.

This reclamation welding process can be applied only in this firm's plant. Tools are repaired promptly and returned without post heat treatment in majority of cases. Developed by **Welding Equipment & Supply Co.**, 229 Leib St., Detroit, Mich.

▲ Mention Item NED-6576 when writing ▲

Hanna AIR & HYDRAULIC Cylinders

ON 1001 jobs Hanna Cylinders simplfy and improve operation; save time and labor; help increase production.

Where can you make use of Hanna Cylinder Power as suggested in these illustrations? Write for Catalog 230.

HANNA ENGINEERING WORKS
1765 ELSTON AVENUE • CHICAGO, ILLINOIS
RIVETERS • CYLINDERS • AIR HOISTS

▲ Mention Item NED-6577 when writing ▲

How to make your **SLEEVE TYPE BEARINGS** *last longer*

Keep them CLEAN

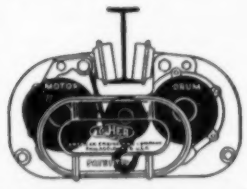
Most bearing failures are due to neglect. Bearings properly designed, installed and *cared for* will usually outlast the unit in which they are applied. The first danger to bearings is dirt . . . particularly of a gritty or abrasive nature. A few minutes spent in cleaning up all applications will pay big dividends in bearing life and efficiency.

SLEEVE BEARING Headquarters

JOHNSON BRONZE CO.
580 SOUTH MILL STREET NEW CASTLE, PA.

▲ Mention Item NED-6578 when writing ▲

Look in classified telephone directory under "A-E-CO LO-HED HOISTS" for your nearest representative.



And it's easy to see why BALANCE is important in an electric hoist

The other day our hoist engineer said to us: "I think we ought to tell people that our balancing the motor and drum about the beam enables us to design short, strong shafts that minimize torsional stresses and reduce the chances of failure, that the Lo-Hed hoist covers can be removed with a screw driver to gain access to the motor, brake, cable or drum . . good points in these times.

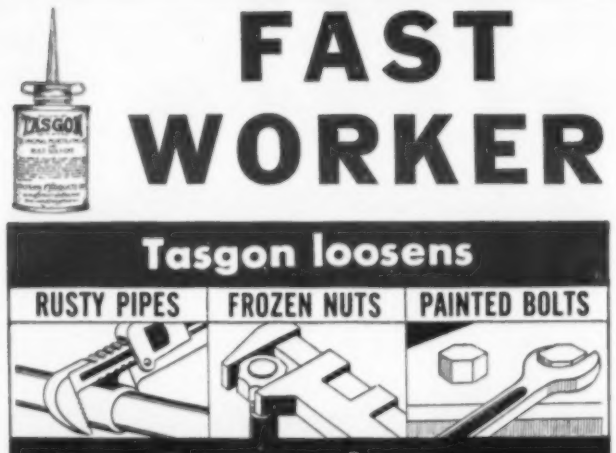
"And don't forget Lo-Heds are as carefully precision-machined today as they were in normal times. A Lo-Hed bought now for war work is an investment in the future." Mr. Engineer, you've said it all for us. We'll sign off by simply asking the reader to send in for his copy of the Lo-Hed catalog.

AMERICAN ENGINEERING COMPANY

AMERICAN ENGINEERING COMPANY
Aramingo Avenue, Philadelphia, Pa.
☐ Please send me your complete catalog of LO-HED HOISTS.
☐ Ask your representative to get in touch with me promptly.
Name.....
Company.....
Street Address.....
City..... State.....

▲ Mention Item NED-6579 when writing ▲

FAST WORKER



At leading mill supply houses, or send 10c for sample can.
Samuel Cabot, Inc., 1361 Oliver Building, Boston, Massachusetts

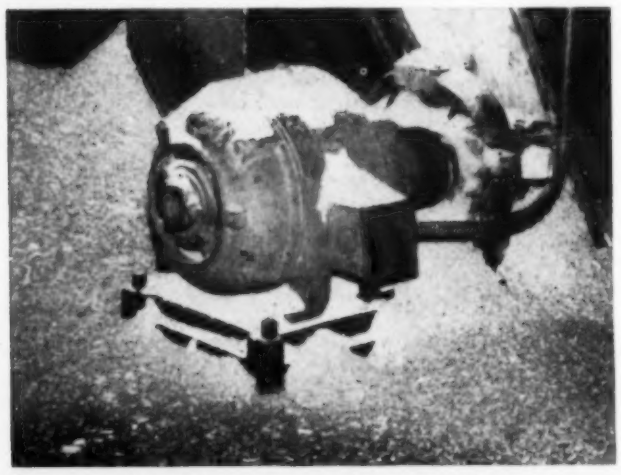
The original penetrant and rust solvent **TASGON DID IT!**

▲ Mention Item NED-6582 when writing ▲

"TOUGH GOING" PROVES UP MEN • • • AND MOTORS

When a motor performs normally, under conditions for which it was not designed, such performance proves extraordinary engineering and construction. For motors, like men, prove extraordinary mettle, not when the going is smooth and in the groove—but when it is tough and in the rough.

Recently, engineers visited several plants where Fairbanks-Morse Motors were giving distinguished service under operating conditions that were "tough and in the rough." What they saw is convincing evidence of the ability of F-M Motors to **take it . . .**



In a pulp mill, *F-M Motors covered with dust, dirt, chips, and debris were doing their jobs day in and day out. A 3-hp., 1200 r.p.m.* open *motor was still on duty after operating beneath debris and subjected to salt water and tannic acid for* four and one-half years.

• • •

In a sawmill, *a 500-hp., 600 r.p.m. F-M Synchronous Motor was driving a head rig, subject to constant vibration, starting and stopping, and* peak loads of 1000 hp. or more!

In a well-known cement plant *three 5-hp. F-M Motors were operating thirteen hours every day on a cycle of nine seconds on and five seconds off. These motors, subject to constant vibration, jolting stops, and the destructive effects of abrasive cement particles, have required no repairs and there is not the slightest sign of overheating after a day's run.*

Use your priority to get motors that will serve you best now—and for the years to come as well. Compare F-M construction, point by point, with any other motor. Fairbanks, Morse & Co., 600 S. Michigan Avenue, Chicago.

▲ Mention Item NED-6583 when writing ▲

New Processes & Materials

CASTING SEALER

Hot oil coating, known as type 40 Synthetex, is claimed to seal castings, prevent oil penetration and permit salvaging of defective castings. Material coats interior hot oil pressure areas, stops sweating through pores and seals surface faults. It will prevent sand and metal particles from damaging pistons, cylinders and other moving parts.

Through use of special method, defective castings can be conditioned so that, in some cases they are improved over accepted, untreated castings, it is claimed. Made by **Protective Coatings, Inc.**, P. O. Box 56-NED, Strathmoor Station, Detroit, Mich.

▲ Mention Item NED-6584 when writing ▲

CONCRETE STRENGTHENER

Used as absorptive lining for forms in which concrete is poured, Hydron is claimed to make concrete several times more resistant to weather and abrasion in dams, fortifications and construction projects of all types. By removing water and air bubbles from surface, lining produces concrete which will last longer than conventionally poured concrete and will have smooth finish without need for brushing or scraping.

In one test, samples of concrete were held within two inches of air blast delivering sharp steel grit at 20 pounds pressure. With concrete cast against ordinary wooden form, blast dug hole ¼-inch deep in one minute. With concrete cast against Hydron, particles bounced off case hardened surface, leaving barely preceptible mark. In weathering tests where samples were repeatedly frozen and thawed, samples of concrete cast against lining withstood four times as many cycles as samples cast against wood.

Form linings consist of absorptive material faced with fabric. Linings are easily applied to concrete forms by stapling. Material is light, easily handled and flexible for use on curved surfaces. After concrete has been cast, forms are removed and fabric is easily peeled from concrete. Smooth surface produced requires no refinishing operation.

Hydron now being produced contains no critical or restricted materials. It is claimed to be greatly improved over earlier linings of rayon, rubber latex adhesives and heavy cardboard. Cost is such that it can be used once and thrown away. Made by **United States Rubber Co.**, 1230 Sixth Ave., New York City.

▲ Mention Item NED-6585 when writing ▲

SODIUM METASILICATE

Added to regular line of Metso cleaners, anhydrous sodium metasilicate is now available without water of crystallization. Called Metso Anhydrous, this technical grade material is of primary interest to fabricators of cleaning compounds for special purposes. It is compatible with soap, wetting agents and other alkalies such as caustic soda and phosphates of soda.

Product is white in color and is free-flowing. It is specially sized to reduce dustiness and to permit ready solubility. Commercial quantities are packed in wax lined barrels and fiber drums. Made by **Philadelphia Quartz Co.**, 124 S. Third St., Philadelphia, Pa.

▲ Mention Item NED-6586 when writing ▲

TYPEWRITER CLEANER

To make typewriters and other office machines last longer and to assure clear-cut appearance of their impressions, Durol typewriter cleaner is said to simplify type cleaning operation. In use, product is applied to type with dauber furnished with bottle. Blotting with dry cloth completes the cleaning operation. It will remove gummy deposits and dust which tend to cause blurred impressions.

This liquid may be used for cleaning adding machines, check-writers and billing machines, as well as other office equipment which has type or plates which must be kept clean for most legible impressions. Product is furnished in 3 and 8-ounce bottles which are fitted with individual applicators and seals on cap to prevent evaporation. Larger bottles are available for refilling. Test bottle will be sent to companies interested in this product. Made by **Reliance Pencil Corp.**, Mount Vernon, N. Y.

▲ Mention Item NED-6587 when writing ▲

FOR EXPENSIVE EQUIPMENT

Clean liquids never clogged a pipe line, or caused delicate control and valve mechanisms to slow up.

SARCO STRAINER

Put a Sarco strainer in your lines ahead of every trap, valve, pump, burner or lubricator. This insurance costs nothing once installed.

Sizes range from ¼" up to 8" for all commercial pressures with screens for steam, water, oil, brine, ammonia and other fluids.

Order an assortment and put them in the line at the points where dirt, scale or other impurities cause shutdowns. They cost little, are easy to install and cleaned in a jiffy by blowing through. Ask for Catalog No. 1200.

141

SARCO SAVES STEAM SARCO COMPANY, INC. 475 Fifth Avenue, New York, N. Y. Sarco Canada Ltd., Federal Bldg., Toronto, Ont.

▲ Mention Item NED-6588 when writing ▲

TO MEASURE...

Moisture Content of Atmospheres or Gases—Quickly and Accurately

The G-E dew-point potentiometer

THIS device functions by measuring the dew-point or temperature at which moisture in a sample of gas will condense.

Extremely valuable in determining the moisture content in furnace atmospheres.

Also used in checking moisture content of other noncorrosive gases—particularly oxygen breathed by aviators at high altitudes.

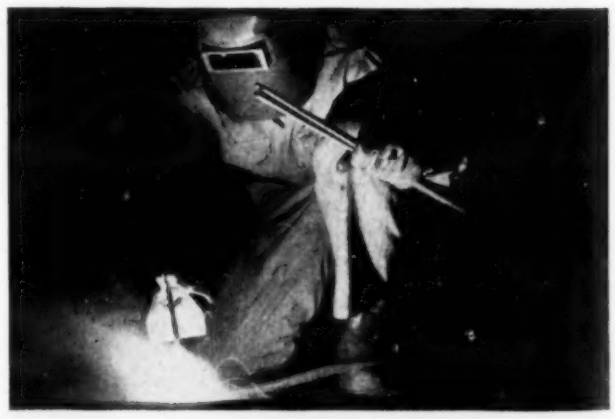
Ask the nearest G-E office for Bulletin GEA-3450.

If you have ANY kind of measurement problem, call or write our nearest office for information on how the G-E Special Products Section can help you meet your individual requirements. ***General Electric, Schenectady, N. Y.***

800-7-8851

GENERAL ELECTRIC

▲ Mention Item NED-6589 when writing ▲



ATTACK!

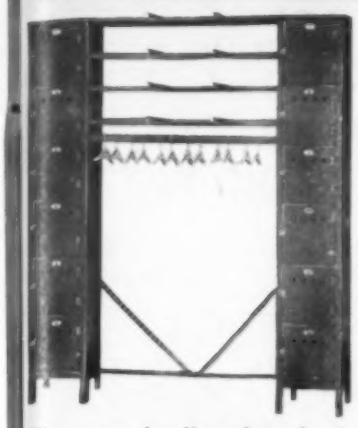
WITH THE ARC. Repair broken parts. Reclaim worn parts. Build special parts and structures. Keep 'em working with Lincoln "Shield-Arc" Welding.

"101 Welding Ideas for Low-Cost Maintenance" gives procedures for repair, hard-facing and fabrication that can be applied to thousands of vital war jobs. Free on request. Ask for Bulletin 405.

"BIBLE" OF ARC WELDING—the new 1308-page "Procedure Handbook" gives latest information on all phases of arc welding design and practice. 1810 illustrations. A $5 value for only $1.50 postpaid in U. S.

THE LINCOLN ELECTRIC CO.
CLEVELAND, OHIO
Largest Manufacturers of Arc Welding Equipment in the World

▲ Mention Item NED-6590 when writing ▲



Available

ACCOMMODATE 12 IN SPACE OF 5 ORDINARY LOCKERS

The new hardboard and plywood Peterson Industrial Lockers come in both single and double (back to back) units that accommodate either *12* or *24* persons in every 5 running feet. Double locker room capacity and save valuable floor space for productive use. Provide each employee with a spaced coat hanger, an individualized ventilated hat shelf and a 12 in. x 12 in. x 12 in. lock box for lunch, micrometers, drawing instruments or personal effects. Keep wraps "in press" dry and sanitary—exposed to air and light. No crumpled hats or soggy lunches in stormy weather. Prompt delivery.

Write for circular.

VOGEL-PETERSON COMPANY
"The Checkroom People"
1803 N. Wolcott Ave. Chicago, U. S. A.

▲ Mention Item NED-6591 when writing ▲

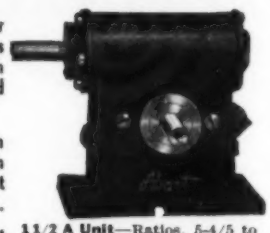
in Fractional H.P. SPEED REDUCERS

SEND FOR NEW

ABART BULLETIN 800-A

Complete, easily read data, for every service in this range. Shows how to make BIG saving with ABART advances in compact rugged construction.

If your reduction problem is in heavier duties, let us help you with ABART Reducers. Save space, cut transmission costs, speed production.



ABART GEARS: Precision-cut to your specifications. No stocks. Send sample blue-prints for estimate.

1 1/2 A Unit—Ratios. 5-4/5 to 1, up to 100 to 1. Output shaft right or left. wt. 9 lbs. Many other types—horizontal and vertical.

Abart GEAR AND MACHINE CO.
MANUFACTURERS OF
Speed Reducers & Gears
4822 WEST 16TH ST. CHICAGO ILLINOIS

▲ Mention Item NED-6592 when writing ▲

new

DIAMOND "40" PRESS!

EASY TO OPERATE

A 40-ton hydraulic press for a wide variety of work—assembling, broaching, straightening, riveting, forcing, pressing, etc. Crosshead rides on four rigid rods. Precision machined, easy to operate. Complete with pressure and oil level gauges, vee table, hand and foot control, adjustable limit stop for return stroke, extreme travel limit stops, motor, pump and piping. Completely wired. Send for folder.

DIAMOND MACHINE COMPANY
OF PHILADELPHIA
2479 Aramingo Avenue, Philadelphia, Pa.
Subsidiary of American Engineering Company, builders of fine machinery for over 75 years, and manufacturers of Taylor Stokers, Marine Deck Auxiliaries, Lo-Hed Hoists, Hele-Shaw Fluid Power.

▲ Mention Item NED-6593 when writing ▲

New Processes & Materials

HEAVY DUTY BABBITT

Replacing tin base babbitt for heavy duty and high speed bearings, Stonewall coppered babbitt may be used in such applications as steel mills, rock crushers and centrifugal pumps. Easy to handle, this metal requires no special skill in casting solid lining. Under tests following S.A.E. specifications for tensile and compressive strengths, material showed elongation of 3 per cent, ultimate tensile strength of 9700 pounds per square inch and yield point of approximately 8000 pounds per square inch. Test specimen reached stress of 17,100 pounds per square inch before breakage.

Since this product does not undergo any change when remelted, its turnings can be salvaged for further use. Because its specific gravity is lower than most tinless babbitts, more linings per pound are obtainable. Casting temperature is 700 degrees Fahr.

Metal is furnished in 3-pound half-spherical ingots which fit readily into ladles, or in 15-pound pigs for use in large bearings or for continuous production. Made by **United American Metals Corp.**, 200 Diamond St., Brooklyn, N. Y.

▲ Mention Item NED-6594 when writing ▲

ELECTRICAL INSULATION

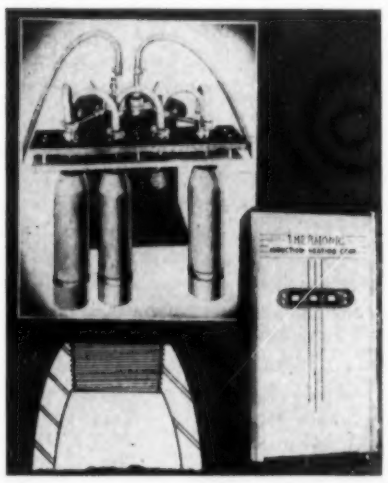
Developed as effective replacement for phenol fiber, Lignin plastic fiber is serving as insulation in many of this company's products. Possessing good electrical characteristics, this fiber is less corrosive than phenol fiber, it is readily punchable and duplicates many other properties of phenol fiber.

Because of war demands on cresylic acid, formaldehyde, resin and paper which are components of phenol fiber, this product is of importance. Lignin paper sheets are made from sulphite water waste. They are conditioned to definite moisture content, heated and subjected to high pressures, this yields tough fiber board which has strength of steel, pound for pound. Cut to prescribed lengths, this fiber board replaces phenol fiber in about two thirds of its former applications. Developed by **Western Electric Co.**, 195 Broadway, New York City.

▲ Mention Item NED-6595 when writing ▲

ANNEALING METHOD

Modification of 75-millimeter shell for revised fitting can be accomplished without interfering with thread chasing action by heating nose to annealing temperature without having heat penetrate shell and thus change its physical characteristics. Having specially designed coils, model 1070 Thermonic Induction generator can handle four shell in 50 seconds.



Push button control applies annealing operation. It features ease and simplicity so that it is not necessary to use skilled operators. Continuous flow of production follows at rate of 280 units per hour. After preliminary setup, no adjustment is necessary. Temperature is controlled exactly to desired area with no annealing beyond, and no metallurgical change. Operation is entirely automatic. Made by **Induction Heating Corp.**, 389 Lafayette St., New York City.

▲ Mention Item NED-6596 when writing ▲

RUST PREVENTIVE

Known as Northwest Rust Preventive 20-A, this product is claimed to afford permanent protection against rust for metal equipment. It is supplied in concentrate form to which is added three parts of oleum spirits or kerosene and one part of water.

Resultant bath drives off any water that may be present on surface of work, replacing it with transparent film which dries to semi-hard tacky coat. Product is packaged in 5, 12 and 50-gallon returnable containers. Working samples are available. Made by **Northwest Chemical Co.**, 9400 Roselawn Ave., Detroit, Mich.

▲ Mention Item NED-6597 when writing ▲

K & E
Phoenix
Reg. U. S. Pat. Off.
TRACING CLOTH IS
GHOST-PROOF!

Perspiration will not stain this improved tracing cloth—for PHOENIX withstands actual immersion in water for more than ten minutes at a time! New working surface permits use of harder pencils to reduce smudges; and erases without marring. Excellent drawing contrast—produces sharp blueprints. Ask your K&E dealer, or write us for a brochure and generous sample.

EST. 1867
KEUFFEL & ESSER CO.
NEW YORK—HOBOKEN, N. J.
CHICAGO · ST. LOUIS · SAN FRANCISCO · LOS ANGELES
DETROIT · MONTREAL

▲ Mention Item NED-6598 when writing ▲

LINK-BELT
POWER TRANSMISSION EQUIPMENT
At the Service of American War Industry

Bearings—Take-ups—Sprockets—thousands of Link-Belt power transmission items are being used throughout the Nation today on Industry's mass production machinery—in the titanic production job of winning the war.

LINK-BELT COMPANY

Power Transmission Equipment—Sprockets, Bearings, Take-ups, Clutches, Gears, etc.

Chicago, Philadelphia, Indianapolis, Atlanta, Dallas, San Francisco, Toronto. Offices, warehouses, and distributors in principal cities. 6930-E

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WAGNER MOTORS
CAN HELP YOU IN YOUR *all-out* WAR EFFORT

Their Proven Dependability Will Help ★ ★ Keep Your War Schedules "On Time!"

You can be assured of reliable performance, low maintenance, and continuity of service by specifying Wagner motors. No matter what the job is—no matter what the operating conditions are—there is a Wagner motor that will keep your equipment on the job 24 hours a day, 7 days a week.

Get the Facts..
Write for Bulletins MU-176, MU-182, and MU-183...These three valuable bulletins illustrate and describe the complete line of Wagner motors.

BUY U.S. WAR BONDS

M42-31

Wagner Electric Corporation
6477 Plymouth Avenue, Saint Louis, Mo., U.S.A.
MOTORS · TRANSFORMERS · FANS · BRAKES

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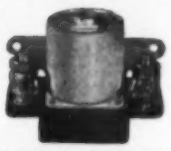
RELAYS BY GUARDIAN
SERVE ALL FRONTS!

★ Yuletide joys of '42 will not include the many electrical gifts which brought us cheer, and ease, and comfort in other years. Relays by Guardian have marched on from peacetime industry to the firing lines of war. Doing war jobs in many ways . . . in planes . . . in tanks . . . in communications . . . in bomb releases and gun controls. Wartime jobs which Guardian anticipated and planned long before "Pearl Harbor".

But, while thinking, building, and engineering the tools of war today, Guardian again is looking ahead to peacetime applications of Relays, Solenoids, Electrical Controls of all kinds. Write. Our wartime experience can help you build better products for the future.



Controls for Any Purpose
ranging from 150 watts to 1000 amps . . . from tiny relays weighing less than an ounce . . to big, rugged two-pounders.

GUARDIAN ELECTRIC
1626 WEST WALNUT STREET CHICAGO, ILLINOIS
A COMPLETE LINE OF RELAYS SERVING AMERICAN WAR INDUSTRY
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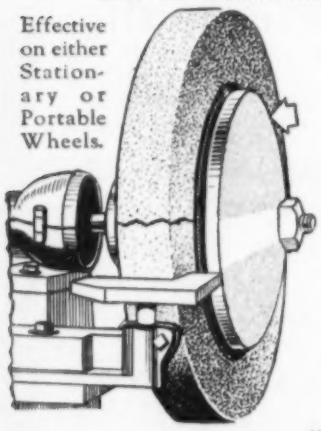
STOP GRINDING WHEEL ACCIDENTS!
USE PERKS SAFETY WASHERS

Simple to Install... Long Lasting...
Low in Cost...and Highly Efficient

Effective on either Stationary or Portable Wheels.



PERMANENT ADHESION OF METAL and RUBBER

Prevents Cracked Wheels from Flying Apart, Even at Faster than Normal Speeds.

FREE FOLDER
"Grinding Wheel Care"
Send for it. It will pay you to learn how temperamental a grinding wheel can be.

STANDARD SAFETY EQUIPMENT COMPANY
232 WEST ONTARIO STREET . CHICAGO, ILL.
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Request A Copy On Your Letterhead!
Plant Managers! Superintendents! Purchasing Agents! Production and Plant Engineers! Here's a book that will give you the answers to your marking problems. It contains hundreds of illustrations, with concise descriptions of Marking Devices for every Industrial Marking application. Yours for the asking . . . request a copy on your letterhead today!

JAS. H. MATTHEWS & CO.
3943 FORBES ST. ∴ PITTSBURGH, PA.
New York—Chicago—Phila.—Boston—Detroit—Newark—Syracuse
DISTRICT SALES OFFICES - CLEVELAND - HARTFORD - BIRMINGHAM
▲ Mention Item NED-6603 when writing ▲

NEW Literature AND Catalogs

AIR FILTRATION AND DUST CONTROL—34-page illustrated bulletin No. 502 discusses major industrial dust problems and their solution—describes characteristics and methods of control of both atmospheric and process dust—shows importance and use of filtered air for industrial ventilation, air conditioning, drying operations, in product finishing, control of bacteria and mold spores, cooling electrical equipment, and protection of engines and compressors—includes a chart listing size and characteristics of air-borne solids—issued by American Air Filter Co., 262 Central Ave., Louisville, Ky.

▲ Mention Item NED-6604 when writing ▲

METAL CLAD SWITCHGEAR—12-page illustrated catalog No. 1110 describes horizontal drawout, metal clad switchgear in 100,000, 150,000, and 250,000 kilovolt-ampere capacities at 5000 and 15,000 volts—advantages of metal clad switchgear in safety, reliability and ease of installation and maintenance are pointed out—includes complete dimensional data on various types of gear available—construction details are illustrated—issued by Roller-Smith Co., 1766-A W. Market St., Bethlehem, Pa.

▲ Mention Item NED-6605 when writing ▲

PREHEATING DATA—18 x 24-inch "Tempil Preheating Chart" tabulates data concerning designation, approximate composition, recommended preheat and proper Tempil temperature indicators to use for various metal groups—Carbon, carbon moly, manganese, high tensile, nickel, medium nickel chromium, chromium nickel, low chrome moly, medium chrome moly, high chromium and high chrome nickel steels, as well as nonferrous metals are covered—issued by Tempil Corp., Dept. D., 132 W. Twenty-second St., New York City.

▲ Mention Item NED-6606 when writing ▲

MEASURING LABORATORY TEMPERATURES—45-page illustrated catalog No. N-33C describes method, originated for measuring laboratory temperatures at highest known precision, which is being used by operators of air conditioning systems wherever low industrial or commercial temperatures must be held reliably within close limits—various types of temperature detectors, measuring instruments and accessories used with them are pictured and discussed—issued by Leeds & Northrup Co., 4934 Stenton Ave., Philadelphia, Pa.

▲ Mention Item NED-6607 when writing ▲

NON-SHRINKABLE DIE STEEL—8-page illustrated bulletin No. 542 describes Truform non-shrinkable die steel—stresses greater hardness, exceptional toughness, and machinability of this steel—shows typical applications and lists forms available—contains directions for forging, annealing, hardening and drawing—issued by Jessop Steel Co., 555 Green St., Washington, Pa.

▲ Mention Item NED-6608 when writing ▲

CARE OF TABLET MACHINES—8-page booklet No. 451 is published to help manufacturers of tablets, both pharmaceutical and industrial, to prolong useful life of their tabletting machines, punches and dies—emphasizes importance of cleanliness, lubrication, and correct use of pressure—intended as guide and instruction book, particularly for inexperienced workers who are being trained by industry to take places of men called into service—issued by F. J. Stokes Machine Co., 5964 Tabor Rd., Olney P. O., Philadelphia, Pa.

▲ Mention Item NED-6609 when writing ▲

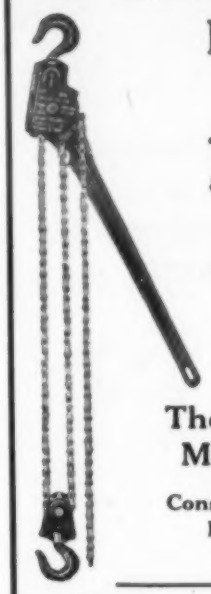
LABOR ARBITRATION RULES—revised edition of "Voluntary Labor Arbitration Rules of Procedure" to meet war regulations and conditions has been announced—is accompanied by "Manual" for using rules covering such subjects as; panels of arbitrators, summary of procedure with respect to parties, arbitrators and the association, institution of proceedings, appointment of arbitrators, and hearings and awards—special section is included on arbitration of wage disputes—contains complete index—issued by American Arbitration Association, 9 Rockefeller Plaza, New York City.

▲ Mention Item NED-6610 when writing ▲

PRESSURE AND TEMPERATURE CONTROLS—8-page booklet No. 836 describes line of pressure and temperature controls and shows suggested methods of application—controls used for pilot duty application, operation of contactors, or for direct control of small alternating and direct current motors—controls are operated by seamless metal bellows which operate snap action precision switch with straight line motion—available for pressures between 30 inches of vacuum and 500 pounds per square inch, and for temperatures between minus 40 and 415 degrees Fahr.—issued by Allen-Bradley Co., 1320 S. Second St., Milwaukee, Wis.

▲ Mention Item NED-6611 when writing ▲

SPEED-SAFETY



ECONOMY AND FLEXIBILITY
The Ultimate In Lifting and Pulling Equipment
COFFING'S
"SAFETY-PULL"
RATCHET LEVER HOIST
The Most Useful Tool in Any Maintenance Department
Conserve Your Hoisting Equipment—It is a Priceless Weapon in This War of PRODUCTION

See Your Distributor or Write for Catalog No. CG-6
COFFING HOIST COMPANY
Ratchet Lever, Spur Geared and Electric Hoists
800 WALTER ST. DANVILLE, ILLINOIS
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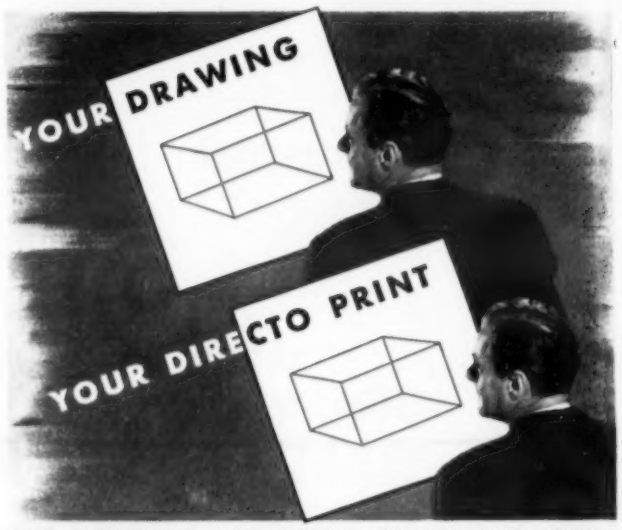

THE DIFFERENT AND BETTER BLACK AND WHITE PRINTS THAT ARE . . .
Sharp, Clear and Permanent

DIETZGEN Directo prints give you denser, blacker lines and a clearer, whiter background. More permanent than any positive print you have ever used, they retain their clear, strong contrast and sharpness. This different and *better* process assures uniform results at any developing speed; speed variations do not penalize you. Print quality is always uniformly high. And Directo prints *fast*.

More than that, Directo developer uses no foreign chemicals. A dependable source of supply is assured. You can always count on Dietzgen Directo prints.

War production plants make important time savings with Directo Prints. All Directo equipment available on priorities. Write for full information *now* if qualified. Any black line process equipment user can buy Directo paper and developer to obtain these better Directo Prints.

EUGENE DIETZGEN CO.
Chicago • New York • San Francisco
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Dealers in All Principal Cities

• *Directo developer doesn't deteriorate. You can conveniently mix large quantities at a time—it won't spoil even in open containers. Every drop is usable. You never have to rebottle what's left in the machine at night or pour it down the drain. You simply add fresh developer as the old is used up. It won't harden in the machine, won't stain or streak your prints.*

7 POINTS OF SUPERIORITY
√ Black lines—white background.
√ Maximum production.
√ Uniform quality regardless of speed of development.
√ Most permanent prints.
√ No marking or discoloration.
√ No deterioration of developing solution. No nightly wash-up.
√ Domestic chemicals—a dependable source of supply . . . Uniform quality.

DIETZGEN DIRECTO
THE *SUPERIOR* BLACK AND WHITE PRINT PROCESS
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BLACK DIAMOND
• PRECISION DRILL GRINDERS •

INEXPERIENCED HANDS KEEP COUNTLESS DRILLS SHARP—RELEASE SKILLED LABOR FOR MORE IMPORTANT WORK

WHEN small gauge or fractional drills are needed in quantities or in a hurry—it costs time and real money to put an experienced machine operator to work on them.

With a Black Diamond however even the most inexperienced apprentice can keep all small drills sharp to meet any emergency—with lips accurately ground to exactly the same length—at the proper angle and with correct clearance for fast, precision drilling.

Why waste time and money when you can cut 50% and more on grinding costs, save expensive drill stock, reduce drill breakage and actually pay for the machine in a short time with the money you save?

SAWS BLACK DIAMOND TOOLS

And when you order a Black Diamond be sure to include the web thinning attachment which grinds Notched, Colton, or so called Crank Shaft points. Write for folder today.

BLACK DIAMOND SAW & MACHINE WORKS, INC.
NATICK, MASSACHUSETTS

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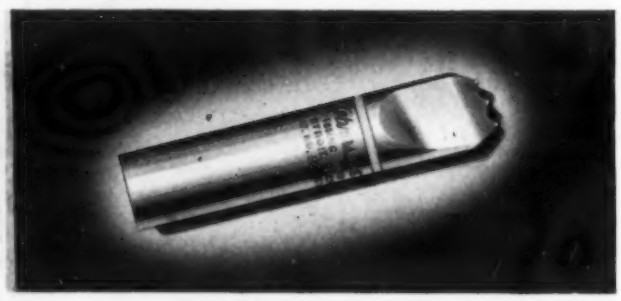
"RIGHT dress"



with Abrasive
"RED BAND" DIAMOND TOOLS

• *Write today for catalog and latest price list.*

Abrasive DRESSING TOOL CO.
DETROIT • MICHIGAN

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ITS WOOD CONSTRUCTION SAVES METAL FOR VITAL WAR NEEDS

• Because its wood construction saves metal, ADSCO Red Diamond Brand Wood Casing can be widely used to protect the underground steam lines of important defense projects. Many installations made in the District Heating industry over 30 years ago are still in active service today.

Write for quotations, also Bulletin 35-65-D.

AMERICAN DISTRICT STEAM COMPANY N. TONAWANDA N. Y.
Making "UP-TO-DATE" Steam Line Equipment for Over 60 Years

ADSCO RED DIAMOND BRAND WOOD CASING

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New Literature—Continued

SOLDERING AND WELDING EQUIPMENT—booklet describes line of welding compounds, soldering fluxes and metal coatings—includes complete instructions concerning uses of chemicals, fluxes, together with other technical information—issued by American Solder & Flux Co., Trenton Ave. & Norris St., Philadelphia, Pa.

▲ Mention Item NED-6617 when writing ▲

STANDARDS FOR WRENCHING BOLTS—16-page illustrated catalog contains NASC Standards for internal hex, wrenching bolts—each table of standards is set in clear, readable type with corresponding diagram at top of each table—material and finish specifications for line of bolts are given—issued by The Holo-Krome Screw Corp., Hartford, Conn.

▲ Mention Item NED-6618 when writing ▲

SAFETY EQUIPMENT—4-page illustrated folder, "Pulmosan Stops Accidents", urges the use of Pulmosan safety equipment for industrial defense against accidents—line includes respirators, goggles, gas masks and protective clothing—other items are Magout powder for extinguishing fires caused by magnesium shavings or incendiary bombs, emergency stretcher outfit for public utilities and safety bulletin board—issued by Pulmosan Safety Equipment Corp., Dept. NED, 176 Johnson St., Brooklyn, N. Y.

▲ Mention Item NED-6619 when writing ▲

LAMINATED SOLENOIDS—2-page illustrated bulletin describes two laminated solenoids, No. 2861 pull type and No. 2923 push-pull type—they are particularly designed for specification by engineer designers for hydraulic valves and general industrial purposes—installation is easy for either direct or remote control, and quick short thrusts—they may be used on alternating or direct current—maximum stroke is ⅞ inch—issued by Dean W. Davis & Co., 549 W. Fulton St., Chicago, Ill.

▲ Mention Item NED-6620 when writing ▲

MEASURING AND CONTROL INSTRUMENTS—16-page illustrated bulletin No. Z-6100 gives condensed listing of company's line of measuring and control instruments—unit construction of temperature controllers and electronic principle for obtaining control without contact between measuring and control functions of instrument are described and illustrated—contains prices and numbers of complete catalog sections on each piece of equipment—issued by Wheelco Instruments Co., 829 W. Harrison St., Chicago, Ill.

▲ Mention Item NED-6621 when writing ▲

ALUMINUM WELDING EQUIPMENT—4-page illustrated bulletin No. 101 describes new line of Revers-O-Charge welding equipment designed for welding of aluminum alloys—line includes both rocker arm and pedestal type welders—feature of latter is built in refrigerating unit for electrode refrigeration—included are details of Revers-O-Charge condenser discharge control unit—issued by Progressive Welder Co., 3025 E. Outer Dr., Detroit, Mich.

▲ Mention Item NED-6622 when writing ▲

SELF-TAPPING SCREW—20-page illustrated booklet, "For Better Fastenings . . . Quicker", presents functions and advantages of each type of self-tapping screw as manufactured—discussions include stock sizes, head styles, packing, finishings and special screws—illustrations show typical and practical applications of product—issued by Parker-Kalon Corp., 200 Varick St., New York City.

▲ Mention Item NED-6623 when writing ▲

STEEL WIRE BRUSHES—illustrated bulletin No. Br-103 describes Staplbond Tampico brushes which embody newly developed type of construction—other brushes described are steel wire fillers, circular brushes made of brass, goblet brushes and cotton potash brushes—issued by Hanson-Van Winkle-Munning Co., Matawan, N. J.

▲ Mention Item NED-6624 when writing ▲

FOOD PLANT CLEANING MATERIALS—42-page illustrated handbook, "Food Plant Cleaning", explains functions of cleaning materials for food processing plants—also contained are special sections on hand cleaning, eliminating sludge and window cleaning—divisions of handbook are for bottling plants, canneries, confectionery plants, dehydrated food plants and others—issued by Magnus Chemical Co., Garwood, N. J.

▲ Mention Item NED-6625 when writing ▲

BRANCH PIPE OUTLETS—16-page illustrated booklet No. WT31 tells how to make branch pipe outlets with WeldOlets, ThredOlets and Socket-End WeldOlets—details of purpose, what they are, how to make right-angle welded outlet stronger and how to reduce turbulence and friction is included—their applications and adaptability to various types of jobs is discussed—manufacturer makes recommendations and gives installation hints—typical installations are listed—issued by Bonney Forge & Tool Works, Green & Meadow Sts., Allentown, Pa.

▲ Mention Item NED-6626 when writing ▲

DATA YOU'LL WANT
---For Your Wartime Door Needs

An alternate that saves steel without sacrificing efficiency—the KINNEAR WOOD ROLLING DOOR. It incorporates, in wood construction, many of the same time-tested advantages that have made Kinnear Steel Rolling Doors industry's preference for almost a half century. Convenient, coiling upward operation. Space saving. Ruggedly built—any size. Easy to install. Specify it for your duration needs.

Offices and Agents in All Principal Cities

Write TODAY FOR BULLETIN 37
Gives complete specifications and shows how the wood-slat curtain is assembled for strength, weather protection and smooth coiling.

THE KINNEAR MFG. CO.
3017 Fields Ave.
COLUMBUS, OHIO

SAVING WAYS IN DOORWAYS KINNEAR ROLLING DOORS

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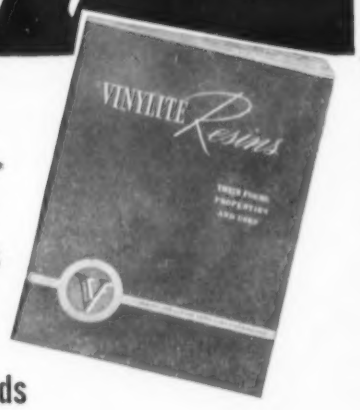
New 20-page booklet



describes latest Vinylite* Resin developments for meeting war-production needs

☆ What are VINYLITE Plastics? How are they fabricated? How do they differ from other plastic materials? What are their advantages that make them so vital to the war effort? Detailed answers to questions such as these are contained in a new 20-page illustrated booklet, "Vinylite Resins—Their Forms, Properties and Uses."

Starting with a brief discussion of VINYLITE Resins and their general characteristics, this booklet covers each of the four basic types in detail—gives present and suggested uses—outlines methods of fabrication or application—and shows tables of chemical, electrical, and mechanical properties. Eleven pages are devoted to the diversified plastic products, both rigid and elastic, made from vinyl chloride-acetate copolymer resins. These include surface coatings, rigid sheets, flexible sheeting and film, molding and extrusion compounds, and special products such as laminating film, calender-coated paper, and VINYON textile fiber.

The next chapter covers the properties and applications of vinyl butyral resins—best known for their use as the interlayer in high-test safety glass, and as the basis for special coatings and adhesives. Following this is a section on vinyl acetate resins which are employed as adhesives for non-porous and porous materials of every description. Finally there is a chapter on vinyl chloride resins which, like the vinyl chloride-acetate resins, have resilient, rubber-like characteristics when suitably plasticized.

With VINYLITE Plastics occupying such an important part in war production, this booklet will prove to be a valuable addition to the reference file of every progressive-minded business executive, designer, and engineer. A post card requesting Booklet P-8 brings your copy by return mail.

Plastics Division
CARBIDE AND CARBON CHEMICALS CORPORATION
Unit of Union Carbide and Carbon Corporation
UCC
30 EAST 42ND STREET, NEW YORK, N.Y.

Vinylite* PLASTICS
Rigid Sheets · Flexible Sheeting and Film · Adhesives
Molding and Extrusion Compounds · Resins for Surface Coatings

**The words "Vinylite" and "Vinyon" are registered trade-marks of Carbide and Carbon Chemicals Corporation.*

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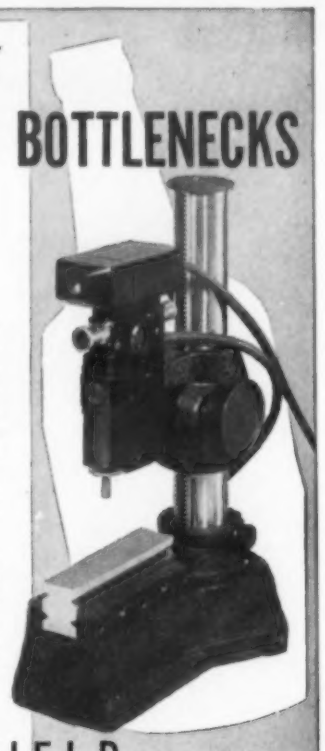
Eliminate
INSPECTION BOTTLENECKS
WITH
SHEFFIELD
ELECTRICHECK



The Sheffield Electricheck has eliminated the bottleneck of slow, tedious dimension checking in many inspection departments because it flashes the answer instantly—as fast as work pieces are presented—amber shows size within tolerances—green oversize—red undersize.

Accurate to .000010" at any tolerance. Can be set to tolerances from .012" to .000050". Flexible—may be mounted to check parts while still on the machine—sturdy—retains accuracy.

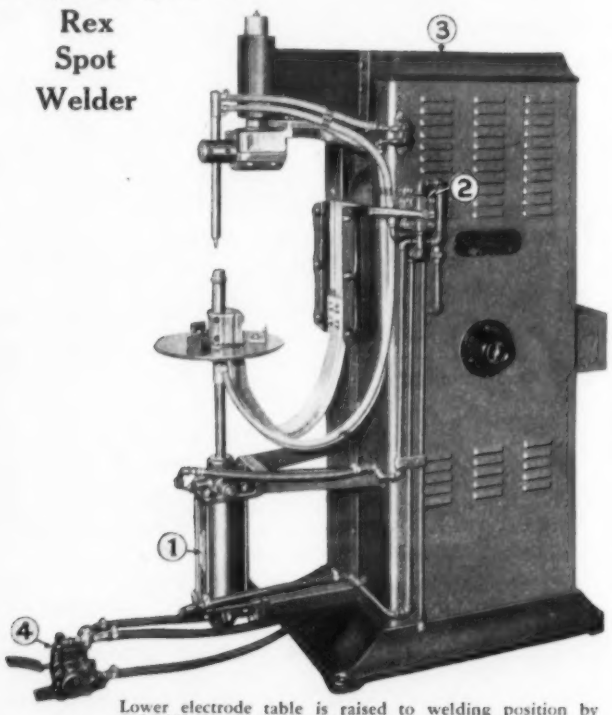
Write for information.

THE SHEFFIELD CORPORATION
GAGE DIVISION
DAYTON, OHIO, U. S. A.
SHEFFIELD

▲ Mention Item **NED-6629** when writing ▲

"We knew that NOPAK would do the job 100%"*

..says designer of
Rex
Spot
Welder



Lower electrode table is raised to welding position by NOPAK Model A Cylinder (1), controlled by NOPAK 4-Way Hand Valve (2). Upper electrode is lowered by NOPAK Model D cylinder (3), inside of housing controlled by NOPAK Model R Foot Valve (4). A successful application of air power to rapid, precise machine movements!

The Rex Air-Operated Spot Welder, with movable lower electrode table, was specially designed for the quick insertion and removal of bulky work. It is reducing spot-welding time on a certain war-production operation from 50 to 12 seconds . . . with better uniformity and precision.

Read this: — "only air cylinders and valves manufactured with *precision* and *care, and absolutely leakproof* could be used. We knew (from experience) that NOPAK Air Cylinders and Valves would do the job ONE HUNDRED PER CENT. The results obtained proved we were right . . ." (signed by the inventor) J. A. Fotie, President of Dyer Welder and Engineering Co., Kansas City, Mo.

Mr. Fotie's experience suggests how standard NOPAK Valves and Cylinders can help you speed-up machine movements in your plant.

GALLAND-HENNING MANUFACTURING CO.
2755 South 31st Street • Milwaukee, Wisconsin

*NOPAK VALVES and CYLINDERS
Representatives in Principal Cities
DESIGNED for AIR or HYDRAULIC SERVICE

A 3889-½A

▲ Mention Item **NED-6630** when writing ▲

New Literature—Continued

SYNTHETIC RESIN INSULATION—12-page illustrated booklet, "Vinylite Plastics for Wire and Cable Insulation", reviews the important advantages derived from use of Vinylite resin compounds for wire and cable insulation from standpoints of installation, service, and safety—this synthetic resin insulation is now used for most purposes previously served by rubber—booklet contains tables indicating the physical and electrical properties of compounds and typical applications—issued by Halowax Products Div., Union Carbide and Carbon Corp., 30 E. Forty-second St., New York City.

▲ Mention Item **NED-6631** when writing ▲

MERCURY-ARC RECTIFIERS—28-page illustrated bulletin No. GEA-3827 outlines various conversion-equipment problems in steel industry, and discusses characteristics and various applications of ignitron mercury-arc rectifier in meeting these problems—describes three types of conversion units commercially available to supply power to large direct current systems in steel mills; synchronous converter, motor-generator set driven by either synchronous or induction motor, and ignitron mercury-arc rectifier—issued by General Electric Co., Schenectady, N. Y.

▲ Mention Item **NED-6632** when writing ▲

LIGHTING AND NEAR INFRA-RED DRYING PROCESS—20-page illustrated brochure Flashes No. 1042 describes how good lighting and near infra-red drying processes are speeding production of war materials—typical applications of equipment in specific industries are shown—units for localized lighting and infra-red processing are also described—issued by Fostoria Pressed Steel Corp., 1240 Harris Rd., Fostoria, O.

▲ Mention Item **NED-6633** when writing ▲

FIRE EXTINGUISHER MAINTENANCE—6-page illustrated folder outlines the important steps in general care, recharging, and reassembly of portable fire extinguishers—lists precautions to be followed—operation of various types of equipment is explained—issued by Pyrene Mfg. Co., 551 Belmont Ave., Newark, N. J.

▲ Mention Item **NED-6634** when writing ▲

AIRCRAFT CONTACTOR—4-page illustrated folder, "Controls by Guardian", describes and lists operating data for B-4 solenoid contactor manufactured to meet U. S. Army Air Force specifications for remote control of aircraft starting motors—it can also do many other jobs calling for control of heavy currents—relay is rated at 200 amperes continuous, 800 amperes surge at 24 volts direct current—folder also shows other types of relays and contactors—issued by Guardian Electric Mfg. Co., 1626 W. Walnut St., Chicago, Ill.

▲ Mention Item **NED-6635** when writing ▲

SHEET METAL PRODUCTS—4-page illustrated folder No. 518 describes company's conversion from peacetime to war production as concerns special light and heavy sheet metal products—offers complete facilities for manufacture of spare parts boxes, ammunition boxes, control boxes and covers, duct assemblies, military instrument holders, surge tanks, heavy-duty oil pans, and similar sheet metal war products—issued by Young Radiator Company, 729 Marquette St., Racine, Wis.

▲ Mention Item **NED-6636** when writing ▲

METAL-CUTTING TOOLS—6-page illustrated folder No. 5783 lists the sizes and prices of 84 standard square and rectangular tool bits, and of 74 varieties of welded-tip tools; all made of 98M2 nonferrous cutting-tool material—recommendations regarding grinding wheels for use on tools made of this alloy are also presented for several types of hand and machine grinding operations—includes pictures and diagrams of the standard tool styles—issued by Haynes Stellite Co., Kokomo, Ind.

▲ Mention Item **NED-6637** when writing ▲

MARINE ROTARY PUMPS—6-page illustrated bulletin No. 120 describes line of marine rotary pumps—"bucket design" is used in both power and hand pumps—power pumps handle from 5 to 700 gallons per minute, with pressures up to 300 gallons per square inch—hand pumps handle from 7 to 25 gallons per minute—few types of vessels that use these pumps as standard equipment for various liquid transfer service are shown—issued by Blackmer Pump Co., 1976 Century Ave., Grand Rapids, Mich.

▲ Mention Item **NED-6638** when writing ▲

SWITCHBOARDS—16-page illustrated, revised edition of bulletin No. 3000 describes circuit breaker and fusible switchboards for protection and control of electric service and feeders supplying current for light, heat and power—various types are illustrated and specifications listed—typical installations are also shown—issued by Square D Co., 6060 Rivard St., Detroit, Mich.

▲ Mention Item **NED-6639** when writing ▲

SPEEDS PRODUCTION! CUTS TIME AND COSTS!

SPEEDY AIR VISE
FAST! POWERFUL!
FOOT CONTROLLED!

$24
Complete with Foot Control Valve, Air Hose and Fittings

HAND FREE OPERATION!
• Foot operation leaves BOTH hands free for fast insertion and removal of work. Vise stays open or closed without constant foot pressure.

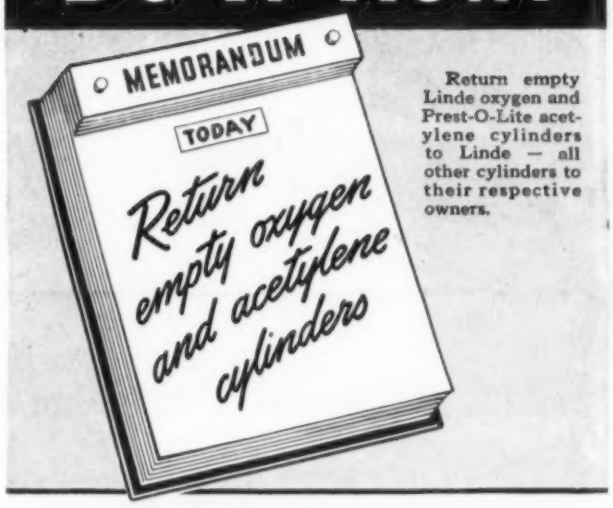
Most important vise design in years! A fast-action, hard gripping air vise that speeds production; saves time, labor and costs! Speedy Air Vise operates from air line or individual compressor, exerting a grip of 15 times air pressure! Jaw opening adjustable up to a maximum of 3 inches. Maximum travel of ½ inch assures rapid insertion and removal of work. Employs no piston, but instead a long-life, multiple-type diaphragm . . . eliminating friction loss, air leakage and slippage. Rugged, compact, low priced, it is the ideal vise for speeding up numerous operations.

Write At Once For Circular D-12

W. R. BROWN CORP., 5720 ARMITAGE AVE., CHICAGO, ILL.

▲ Mention Item **NED-6640** when writing ▲

Do It Now!



Return empty Linde oxygen and Prest-O-Lite acetylene cylinders to Linde — all other cylinders to their respective owners.

THE LINDE AIR PRODUCTS COMPANY
Unit of Union Carbide and Carbon Corporation
30 East 42nd Street UCC New York, N. Y.
In Canada: Dominion Oxygen Company, Limited, Toronto

RETURN CYLINDERS PROMPTLY

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Made for PRECISION ACCURACY

Smith MASTER SURFACE PLATES

Every Smith Surface Plate is a true master plate -- with precision lapped surface, relieved by hand flaking to provide the maximum number of uniform bearing points to meet gauge makers' requirements and to prevent gauges and the like from "freezing". Aircraft and Ordnance plants, demanding the greatest accuracy in surface plates, re-order many times.

Write for new descriptive literature.

SMITH TOOL & ENGINEERING CO.
Precision Measuring Equipment
811 N. WINGERT ST. BUCYRUS, OHIO

AVAILABLE SIZES
8 x 12
9 x 14
12 x 18
18 x 18
18 x 24
24 x 24
20 x 30
24 x 36
30 x 36
30 x 60
36 x 68
OTHER SIZES MADE TO ORDER

PROMPT DELIVERY ON STANDARD SIZES

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Now INJECTION MOLDS
6 or 7 DAYS SOONER

You can now get standard bases — delivered from stock — to fit your particular requirements — and save at least 6 or 7 days' time in getting mold ready for production. Most of designing work is eliminated.

The adoption of DME Standards in your molding practice assures more efficient production. There is no danger of sagging or settling of cavities because added support is given to back-up plate through extra pillars. The possibility of having the cavities damaged by having the mold set come together improperly is also eliminated. After their first service, they can be easily modified to accommodate later setups. More than half of the materials in every standard can be re-used, thus saving critical metals.

Our engineering staff can assist you with the designing of mold sets if you send us your parts drawings. If you have your own engineering service, we can supply master layouts.

SEND FOR CATALOG

DME DETROIT MOLD ENGINEERING COMPANY
4835 WOODWARD AVENUE • DETROIT, MICHIGAN

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WHEREVER WATER OR WATER SOLUTIONS ARE USED IN YOUR PRODUCTION PROCESSES CHANCES ARE YOU CAN SPEED UP PRODUCTION, SAVE MATERIALS, INSURE BETTER UNIFORMITY AND CUT WASTE BY Beckman—CONTROLLING THE pH OF YOUR PROCESS SOLUTIONS!

Let Our Engineers Help You! They have had wide experience in adapting pH control to modern industrial operations . from electro-plating to boiler feed water control, chemical processes to waste-disposal. They will gladly make recommendations to fit YOUR problem.

There is a size and type of Beckman pH instrument for every size plant—for every application. Write for literature!

NATIONAL TECHNICAL LABORATORIES • SOUTH PASADENA, CALIFORNIA

Beckman HAS PIONEERED EVERY MAJOR DEVELOPMENT IN MODERN pH CONTROL AND EQUIPMENT

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CLEAN UP A DAY'S WORK EVERY HOUR

Because one man with a Hypressure Jenny Steam Cleaner can work 8 to 10 times faster than by old fashioned hand methods, a day's cleaning work can be completed in *one hour or less!* Thus in production and maintenance cleaning, vital man and machine hours are saved for all-important war production. You save money, too! Hypressure Jenny users report up to 40% reduction in machine-repair payrolls, 85% lower floor cleaning costs, savings of $14 per 1000 sq. ft. of plant windows cleaned. Savings usually pay for the machine the first year or sooner. Send for a free survey to find out how much Hypressure Jenny can save you.

HYPRESSURE JENNY DIVISION OF

HOMESTEAD VALVE MFG. CO. 50 Years 1892 1942
BOX 84 • • • • CORAOPOLIS • • • PENNSYLVANIA

▲ Mention Item NED-6645 when writing ▲

New Literature—Continued

TRAINED SERVICE IN WAR WORK—16-page illustrated bulletin, "Koven Men and Machines for War Work", presents comprehensive idea of facilities, experience and trained workers offered by company in metal fabricating for both prime and sub-contract war production—traces history of company—gives detailed information on equipment used in sheet and plate welding, machine and galvanizing shops—illustrations show many industrial and armament units produced by company—issued by L. O. Koven & Bro., Inc., 150 Ogden Ave., Jersey City, N. J.

▲ Mention Item NED-6646 when writing ▲

INDUCTION HEAT-TREATING—16-page illustrated booklet, "Faster Production With Tocco", describes induction operating principles in hardening, brazing, annealing and heating metal—tells how surface hardening of parts eliminates pretreatment, straightening and cleaning operations while hardening only predetermined surface areas of metal—illustrates use to through-harden parts to obtain high physical properties of metal—points out advantages for forming and forging as used in production of motor valves, cartridge cases, gun barrels, propeller hubs and similar parts that must be processed to minimize scaling, conserve steels and save man-hours in making dies—booklet also shows various units of Tocco Junior machines—carries complete listing of their specifications—issued by The Ohio Crankshaft Co., Dept. 3, 3800 Harvard Ave., Cleveland, O.

▲ Mention Item NED-6647 when writing ▲

MOLDING PRESSES—16-page illustrated catalog No. 427 describes semi-automatic toggle-type compression presses and single punch and high-speed rotary performing presses for plastics industry—shows new and improved line of presses from 20 tons to 300 tons capacity; completely automatic equipment for molding closures and threaded parts; and presses for molding buttons, toothbrush handles and for laboratory work—many examples of molded parts and press installations in a number of plants are shown—issued by F. J. Stokes Machine Co., 5964 Tabor Rd., Olney P. O., Philadelphia, Pa.

▲ Mention Item NED-6648 when writing ▲

LIGHTING WAR PLANTS—12-page illustrated bulletin No. GES-3033 describes Forlamp ballast for war plant lighting—shows how it saves in critical war materials: iron, steel, aluminum, and copper—saves up to 50 per cent in lighting costs—by three methods of conversion it is applicable to nearly all plants—operates four 100-watt Mazda F lamps on Y-connected circuits in 277/480 Y-volt class—gives information also on Tulamp and single-lamp ballasts for all industrial plant and office lighting—issued by General Electric Co., Schenectady, N. Y.

▲ Mention Item NED-6649 when writing ▲

PROPORTIONING BURNER—16-page illustrated catalog No. 407 describes proportioning oil burner giving diagrams for automatic control hook-ups and installation—includes charts showing burner capacities under varying conditions of air pressure—sizes and capacities are available for practically all requirements—also shown are accessories and controls—issued by Hauck Mfg. Co., 128-138 Tenth St., Brooklyn, N. Y.

▲ Mention Item NED-6650 when writing ▲

INDEX AND HOLDING FIXTURES—8-page illustrated bulletin, "Zagar Collet Chucking Fixture," describes two types of collet fixture (1) for holding and indexing (2) for holding only—outlines point by point setting up and operating of both types—shows how they simplify and speed up production—this universal device is designed for use in conjunction with machine tools—issued by Zagar Tool, Inc., 23880 Lakeland Blvd., Cleveland, O.

▲ Mention Item NED-6651 when writing ▲

POWER ALCOHOL—209-page illustrated book, "Food For Thought", discusses recent advances in methods of distillery operation which make possible manufacture of power alcohol from otherwise unsalable farm crops such as surplus corn, wheat, cull potatoes or any other kind of carbohydrate that exists in too great quantity or too poor quality for use as food and feed—it tells how power alcohol can run farm tractors, trucks and automobiles—specific, scientific information on recent improvements in alcohol manufacturing process is included in appendix—$2.00 per copy—issued by Indiana Farm Bureau, Inc., 47 S. Pennsylvania St., Indianapolis, Ind.

▲ Mention Item NED-6652 when writing ▲

WELDING POSITIONER—4-page illustrated bulletin No. 205 describes 20-ton capacity welding positioners—bulletin shows how they save up to 50 per cent of welding labor costs and produce stronger, smoother welds—these positioners make possible downhand welding position which reduces fatigue in workers and saves from 5 to 7 per cent of welding rod—issued by Ransome Concrete Machinery Co., Industrial Div., 842 Ned St., Dunellen, N. J.

▲ Mention Item NED-6653 when writing ▲

ALLOY-SPRAYER
MELTS and SPRAYS LOW FUSING ALLOYS
(up to 1200° F.)

Photographs illustrate the spraying of a wood spotting die. A thin coating is sprayed, then the supporting frame is "tack sprayed" to hold it while metal to a depth of ¼" is sprayed. Only four minutes required for the entire operation.

PORTABLE, SELF-CONTAINED SPRAYER . . . Melts and sprays almost any low temperature alloy! For REPRODUCING: Models, Molds, Dies, Wood Grain, Leather Grain, Dies for Spotting, Masking for Templates. For PRODUCING: Plastic Molds, Jigs, Fixtures. . . For PROTECTIVE COATING: Cutting Tools, Wood Patterns, Foundry Molds, etc. Send for Bulletin AS-6.

Alloy-Sprayer Company
2060 Book Bldg. Detroit, Mich.

▲ Mention Item NED-6654 when writing ▲

FACTORIES FIND EXTRA VALUES IN
SUSPENDED GAS HEATERS

AND now in the industrial field, Reznor Unit Heaters have proved themselves outstanding. Yes, their ability to deliver lots of warm air over wide areas is one of the reasons. But, delivering heat from a suspended position, above the working zone, also helps to make Reznor Heaters valuable to production management.

Reznor Unit Heaters may be easily and quickly installed—with lower installation costs. This type heating equipment also uses 89% less vital materials than cast radiation systems. You'll find it worth-while to investigate. Write for catalog U 42.

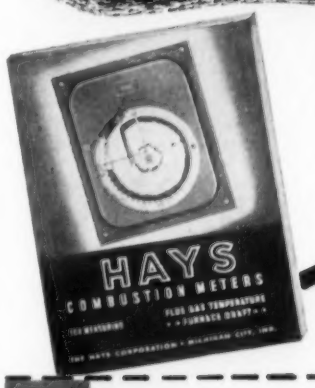
"THOSE REZNOR HEATERS MOVE A LOT OF WARM AIR"

REZNOR MANUFACTURING CO.
101 James St., Mercer, Penna.

GAS HEATERS EXCLUSIVELY SINCE 1888

▲ Mention Item NED-6655 when writing ▲

The "TELL-ALL" BOOK ON COMBUSTION METERS



TELLS what CO_2 is, why important, how measured and how interpreted. Explains Orsat Principle and why preferred.

Illustrates all models Hays Combustion Meters.

Send for your copy today, it's *Free*

MAIL THE COUPON

Name _____
Position _____
Firm _____
Address _____

The HAYS CORPORATION
SINCE 1901 COMBUSTION INSTRUMENTS AND CONTROL MICHIGAN CITY, INDIANA, U.S.A.

▲ Mention Item NED-6656 when writing ▲

AMPLICALL LOCATED HIM INSTANTLY IN BUILDING NO. 5!

DANIEL S. LARSON

Most of the hundreds of local and long-distance calls received daily at the Lindberg Steel Treating Co. of Chicago are for production chief Daniel S. Larson and his 15 supervisors who are constantly on the move throughout their five plants. Locating these key men on seconds notice was the big problem here that was solved by *AMPLICALL* Inter-Com. and Paging. Their new sound system taught them what many other leading plants have learned—that *AMPLICALL* does a stand-out job; not only simplifying traffic control but also performing many other vitally important war plant functions.

• *Electroneering* is our business •

Rauland

Buy War Bonds and Stamps

RADIO — SOUND — COMMUNICATIONS

The Rauland Corporation . . . Chicago, Illinois

▲ Mention Item NED-6657 when writing ▲

DETROIT HOISTS & CRANES
A TYPE FOR EVERY PURPOSE

Detroit Hoists and Cranes are built in a wide variety of types for every kind of material handling purpose. They include 1, 2 and 3 motor designs, both cab and floor controlled. Capacities range from 250 lbs. to 10 tons.

Consult us about hoists and cranes; have our engineers give you recommendations on how to handle your problem to best advantage. Also, get a set of the new descriptive bulletins on Detroit Hoists and Cranes.

TITAN
The little hoist with big hoist construction

Double I-Beam, 3-Motor Traveling Crane, with lateral reinforced construction.

DETROIT HOIST & MACHINE CO.
8208 MORROW ST. DETROIT, MICH.

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Electric Control FOR OIL HYDRAULIC SYSTEMS

VICKERS
SOLENOID OPERATED VALVES

Provide means for remote electric control of hydraulic operating cycles. Compact and easily installed, they are available in standard pipe sizes from ¼" to 3" and for pressures up to 2000 lbs. per sq. inch. Write for installation and operating data, mentioning type of valve operation and capacity required.

VICKERS Incorporated
1456 Oakman Blvd. • DETROIT, MICHIGAN

▲ Mention Item NED-6659 when writing ▲

New Literature—Continued

SPEED REDUCTION UNITS—16-page illustrated catalog No. R-42 describes American reduction drives—these units have fixed speed ratio of 13 to 1 and mount on shaft extension of driven machine by means of keyed bushing—they deliver any desired driven speed from 11 to 154 revolutions per minute—typical installations of reduction drives are illustrated—catalog includes tables showing specifications and prices—issued by The American Pulley Co., 4245 Wissahickon Ave., Philadelphia, Pa.

▲ Mention Item NED-6660 when writing ▲

ROLLING DOORS—8-page illustrated catalog, "Cornell Rolling Doors", describes upward acting doors in wood and metal, rolling steel grilles and sliding grilles—complete information is given on recent designs which substitute wood for critical metals—diagrams and pictures show construction and operation of various types of doors—issued by Cornell Iron Works, Inc., 36-33 Twelfth St., Long Island City, N. Y.

▲ Mention Item NED-6661 when writing ▲

CARBIDE TOOLS—40-page illustrated catalog No. 43 announces line of Kennametal tools with longer tips, new tool styles and applications—covers standard, non-standard and special tools—diagrams show correct rake angles for tools made with Kennametal standard blanks—one section on general information tells how to specify and order tools and blanks—issued to McKenna Metals Co., 171 Lloyd Ave., Latrobe, Pa.

▲ Mention Item NED-6662 when writing ▲

LIFTING TRUCKS—4-page illustrated folder, "At Your Service", presents information on Red Giant Liftrucks—they are designed to save time and handling costs in war and essential civilian industries—stresses safety, durability, and economy of these trucks—specifications and illustrations of several models are included—issued by Revolvator Co., North Bergen, N. J.

▲ Mention Item NED-6663 when writing ▲

CARE OF STEEL LOCKERS—wall poster advises best method for care and use of steel lockers—they must be maintained for war's duration—new steel lockers will not be available and repair parts are difficult to obtain—suggests that management do it's part by keeping locker exteriors clean, making periodic checks for possible damage—main responsibility rests with users who through commonsense rules can avoid locker damage and promote locker room safety—issued by Penn Metal Corp. of Pennsylvania, 36 Oregon Ave., Philadelphia, Pa.

▲ Mention Item NED-6664 when writing ▲

PAPERBOARD PACKING—34-page illustrated booklet, "Paperboard Goes To War", presents a colorful, pictorial record of some interesting paperboard products manufactured for war industries—stresses that there is custom-built package for every product—shows paperboard containers used to send machine gun cartridge belt links, emergency rations, shell, replacement parts, anti-tank mine assemblies, Army regulation skiis and other necessities of mechanical war—military photographs used are from U. S. Army Signal Corps—issued by Container Corp. of America, 111 W. Washington St., Chicago, Ill.

▲ Mention Item NED-6665 when writing ▲

VENTILATING EQUIPMENT FOR WAR USE—8-page illustrated brochure No. 305 pictures in 42 duotone photographs use of company's equipment in both World War I and World War II—booklet is divided into three sections concerning war in air, on sea and on ground respectively—blackout ventilation systems for crowded factories, cooling communication apparatus for big bombers and portable fume exhausters for welders in shipyards are some of the types of equipment illustrated—issued by Ilg Electric Ventilating Co., 2803 N. Crawford Ave., Chicago, Ill.

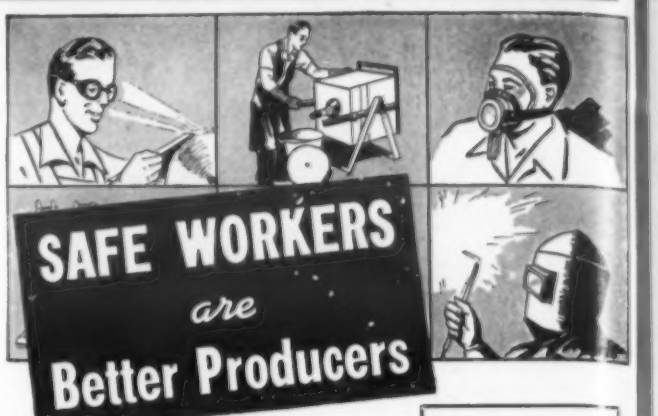
▲ Mention Item NED-6666 when writing ▲

ALLOY WELDING—2-page bulletin No. 182 gives instructions for using Castolin Eutectic alloy arc rod for welding cast iron—specifications and applications are also listed—this new electrode is to be used as substitute for scarce metals for low temperature welding applications—issued by Eutectic Welding Alloys Co., 40 Worth St., New York City.

▲ Mention Item NED-6667 when writing ▲

GRINDING MACHINE PROBLEMS—27-page illustrated booklet, "What's Your Grinding Problem?", is a trouble-shooting manual for grinding machine operators—manual discusses wheel selection, mounting trouble, diamond dresser costs, coolants, imperfect grinding finishes, spoiled work, low rate of production, short wheel life, wheel breakage, reconditioning and sharpening high speed tools and cutters—issued by Norton Co., 200 New Bond St., Worcester, Mass.

▲ Mention Item NED-6668 when writing ▲



Workers haunted by fear of accidents—or exposed to health hazards—can not work at top efficiency! Today's production calls for healthy, energetic, alert workers—kept safe and worry-free by proper accident prevention and health protective equipment. Is YOUR Safety Equipment adequate for increased payrolls and extra shifts? Check up—then write Pulmosan for immediate service on any problem or product for safety. If it's for Safety—we have it! Send for our complete catalog—it will suggest many helpful safeguards.

EVERYTHING FOR INDUSTRIAL SAFETY

Acid & Chemical Handling, Face and Eyeshields, Foot Guards, Gas Masks, Goggles, Helmets, Hoods, Protective Clothing, Respirators, Welding, etc.

WRITE FOR CATALOG

PULMOSAN SAFETY EQUIP. CORPORATION
Dept. NED, 176 Johnson St., Brooklyn, N. Y.

▲ Mention Item NED-6669 when writing ▲

Presenting

THE HANDY NEW MEAD

MIDGET AIR-CLAMP

Delivers 80 lbs. Pressure on a line Pressure of 100 pounds.

SPEED · POWER
UTILITY · ECONOMY

This new low-cost pressure unit, designed expressly for the aircraft industry, promises to save countless man-hours in all industrial operations involving the joining by welding, riveting or bolting of two or more component parts of any assembly. Also useful as a work-ejector in many jigs, fixtures.

ADVANTAGES OVER MECHANICAL CLAMPS:

1. Multiple Set-Ups Operated by Single Master Valve
All Air-Clamps in any setup can be operated by a single master valve, whether there be two or several hundred in the operation. "Lock-up" and "release" of assemblies is instantaneous, saving many minutes on each unit, even on small, simple assemblies.

2. May be Installed in Cramped Corners
The compact size of "Midget Air-Clamp" permits installation in cramped corners difficult to reach with more bulky mechanical clamps.

3. Equal Ram Pressure at Any Stroke Point
Special delicate adjustments are unnecessary, since the Air-Clamp ram holds with equal pressure at any point along its stroke.

4. Controlled Independently of Any Other Assembly Group
Any desired group of "Midgets" can be controlled independently of any other group in a given assembly. For example, in assemblies where certain primary members are laid in first, the primary members can be controlled by one master valve, the secondary members by another valve, etc.

5. Facilitates Delicate Drill Operations
Many kinds of light bend assembly jobs and delicate drilling operations can be facilitated by the Midget Air-Clamps actuated by foot control valves leaving operator's both hands free to handle the work pieces.

SPECIFICATIONS

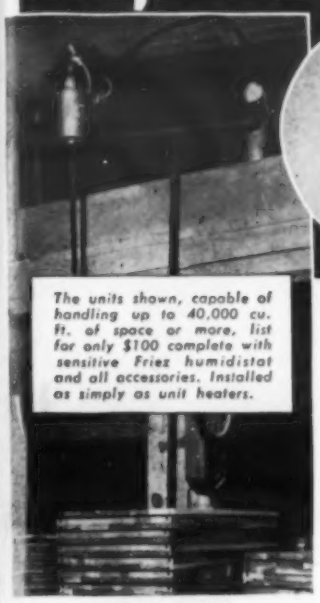
Midget Air-Clamp delivers 80 lbs. pressure on a line pressure of 100 lbs. The stroke of the ram is ⅝". Length (including straight nipple) 4½"; with elbow nipple, 4". Height 1¾"; width 1⅞"; C. L. of ram is 1⅛" above supporting surface. An internal return spring withdraws ram when air is exhausted from cylinder by control valve. Action is instantaneous.

Shipped on Approval Trial to War Contractors

Mead SPECIALTIES CO.
15 S. MARKET ST. DEPT. 12-NA CHICAGO, U. S. A.

▲ Mention Item NED-6670 when writing ▲

Dry Air Robs Output



Use ARMSTRONG Steam-Type HUMIDIFIERS

They give results that end your dry air problems permanently.

The units shown, capable of handling up to 40,000 cu. ft. of space or more, list for only $100 complete with sensitive Friez humidistat and all accessories. Installed as simply as unit heaters.

DRY air causes fiber breakage in textile mills, warping and checking of wood, shrinkage of paper, excessive static electricity, spoilage of certain foods, cracking of leather, loss of weight, excessive dust and many other evils that cut deep into wartime output.

Hundreds of leading plants in all types of industries are using Armstrong Humidifiers to stymie the dry air nuisance. Ask for literature on this practical method of humidification today.

WRITE TODAY for your copy of Armstrong's new bulletin, "Armstrong Humidifiers for Industry". It shows how plants in virtually every industry have solved their dry air problems.

ARMSTRONG MACHINE WORKS
819 Maple Street • Three Rivers, Michigan
Built by the Makers of Armstrong Steam Traps

▲ Mention Item NED-6671 when writing ▲

Take the Tool Right to the Job!

STOW

FLEXIBLE SHAFT MACHINES

FOR

grinding — drilling
sanding — buffing
wire-brushing — polishing

A Stow unit cleans up in a hurry—anywhere in the plant—those hard-to-get-at jobs that so often form bottlenecks . . . saves the day when finishing of irregular-shaped pieces can't be done by ordinary machine set-up! For pinch-hit jobs, rush repairs, toolroom operations, or steady production-line work, Stow is the "one best tool" that saves time and money! Write us today for the new Stow Catalog!

STOW FLEXIBLE DRILL-SHAFT gets into close quarters, works where regular drills can't reach. Lengths up to 48"—drill sizes up to 1/4". Ask for literature.

STOW MFG. CO., INC.
26 Shear Street
Binghamton, N. Y.

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Substitute with GASKETS that are Better than those You are now using

FREE ENGINEER'S GASKET SAMPLE BOOK

Is some gasket material you've been using, now unobtainable? Let Fel-Pro suggest a substitute that *improves* on the original. Fel-Pro Gasket superiority is the result of many years of working with manufacturers in every field of industry developing gaskets to meet their special requirements. One of these is probably the solution to *your* gasket problem. Put it up to our consultant engineering service to recommend the right Fel-Pro Gasket for your particular need—or develop one.

This FREE Fel-Pro Gasket Sample Book contains actual samples of 36 Gasket Materials with full descriptions and engineering data. Write today for your copy.

FEL-PRO Gaskets
MECHANICAL PACKING
GREASE RETAINERS

FELT PRODUCTS MFG. CO., 1510 CARROLL AVE., CHICAGO, ILL.

▲ Mention Item NED-6673 when writing ▲

New Literature—Continued

CONSERVING MULTIPLE V-BELT DRIVES—16-page illustrated booklet, "23 Ways To Conserve the Life of Your Multiple V-Belt Drives", is designed to educate power users in proper procedure of selection, installation and maintenance of their multiple V-belt drives in order to obtain maximum life out of every belt—warns that in war time belt life is used up at rate of two to three times faster than normally—each suggestion is accompanied with drawing illustrating proper methods of care—issued by Multiple V-Belt Drive Association, 140 S. Dearborn St., Chicago, Ill.

▲ Mention Item NED-6674 when writing ▲

AUTOMATIC MILLING MACHINE—12-page illustrated catalog No. M-964-1 explains No. O-8 plain automatic milling machines for milling small intricate parts produced in large quantities—machine is compact and completely automatic having finger tip cycle starting lever—one man can operate several machines with minimum of lost motion—operating data and illustrations are included for various types of machines—issued by The Cincinnati Milling Machine Co., Marberg and South Sts., Cincinnati, O.

▲ Mention Item NED-6675 when writing ▲

VALVES AND UNIONS—168-page illustrated catalog No. 42 lists and describes line of valves and Dart unions—detailed sections are written on bronze valves, iron valves, fire protection valves, blow-off and quick operating plug valves, unions, flange unions and union fittings—last section contains general information such as price lists, telegraphic codes and engineering data—issued by The Fairbanks Co., 392 Lafayette St., New York City.

▲ Mention Item NED-6676 when writing ▲

FOUNDRY MATERIALS HANDLING—8-page illustrated bulletin No. 124 describes how vibrating Shakeouts speed up foundry operations by removing sand and gaggers from flasks, and how they improve working conditions by reducing dust hazard—heavy duty coil springs are designed so that they will support weight of handling device plus required maximum super-imposed load with safety—operating data and illustrations for various types of units are included—issued by Robins Conveying Belt Co., 270 Passaic Ave., Passaic, N. J.

▲ Mention Item NED-6677 when writing ▲

FLEXIBLE COUPLINGS—4-page illustrated folder No. 16 describes Waldron gear type coupling—all parts are forged steel and accurately machined—shouldered oil plugs with copper gaskets insure positive seal at high speeds—cover sleeves have lubricated bearing on crown of hub teeth—issued by John Waldron Corp. New Brunswick, N. J.

▲ Mention Item NED-6678 when writing ▲

SHORT CENTER BELT DRIVES—32-page illustrated catalog ED-42 describes v-belt drives, flat-belt drives and motor base mountings for special applications—offers suggestions for obtaining utmost service from equipment which is difficult to replace—photographs and case histories of typical power transmission installations are featured—includes drive selection tables, blueprints and dimension tables—issued by American Pulley Co., 4245 Wissahickon Ave., Philadelphia, Pa.

▲ Mention Item NED-6679 when writing ▲

CENTRIFUGAL COMPRESSORS—20-page illustrated catalog No. 386-2 describes line of centrifugal compressors designed for application wherever blowers for smaller capacity work are required—units are available in more than two hundred sizes, with pressures from ½ to 3 pounds—contains performance tables, dimension diagrams, unit and installation photographs—issued by B. F. Sturtevant Co., 45 Readville St., Hyde Park, Boston, Mass.

▲ Mention Item NED-6680 when writing ▲

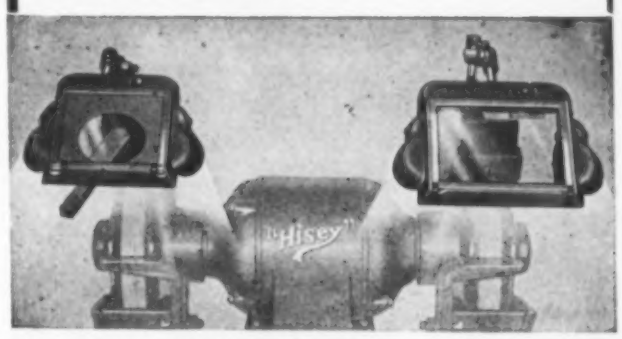
CHIMNEYS FOR DEFENSE HOMES—5-page illustrated folder, "Vitroliner For Victory In Low Cost Defense Houses", describes complete chimney especially designed for defense houses—it is adaptable to oil, gas or coal heating—four styles of chimney tops are available—all types are made of iron, heavy gauge enameling stock, and finished with special vitreous enamel—rain cap is furnished if desired—supplementary sheet of installation instructions is included in folder—issued by Condensation Engineering Corp., 2515 Archer Ave., Chicago, Ill.

▲ Mention Item NED-6681 when writing ▲

CHEMICAL MIXING TANKS AND PROPORTIONERS—4-page illustrated bulletin No. 312 describes Graver chemical mixing tanks and proportioning equipment—tanks are available in either vertical cylindrical or horizontal rectangular type units—chemical proportioner has water meter of disc, turbine or propeller type—remote control chemical proportioner makes it possible to locate flow meter at any point in raw water supply line—specifications for equipment are listed—issued by Graver Tank & Mfg. Co., East Chicago, Ind.

▲ Mention Item NED-6682 when writing ▲

Grinder shields that do MORE than PROTECT . . .



ACTUALLY SPEED AND IMPROVE THE WORK!

Not just grinder guards, but scientifically designed aids to *greater production*. Concealed lamps illuminate exact point-of-operation, facilitating faster, more accurate work. Equipped with new VERD-A-RAY LAMPS that eliminate HARMFUL LIGHT RAYS, facilitate vision, reduce eye strain and fatigue by actual conservation of VITAMIN "A" in the body.

Upper left shows Model 4 LL equipped with #28 Magnifying Lens. Upper right shows Model 5 LL with Safety Glass. Brackets adjust to any position. Various sizes and light capacities for every requirement. Write for illustrated bulletin.

THE SURTY MANUFACTURING CO., INC.
Manufacturers of Industrial Safety and Inspection Equipment
4137 West Kinzie St. Chicago, Illinois

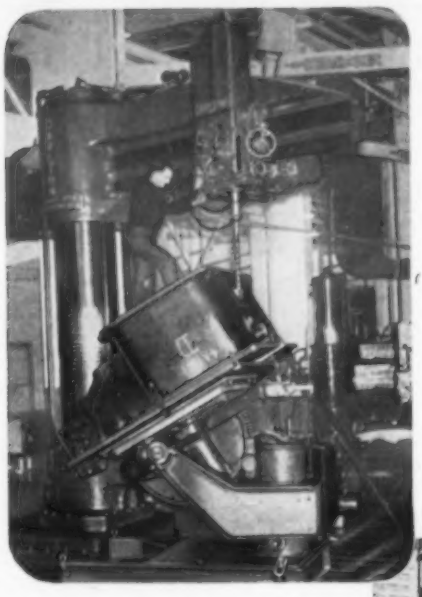
▲ Mention Item NED-6683 when writing ▲

"General GEAR" IS A FIGHTER TOO...

He's the guy that makes the Jeeps Jump . . . He's also the BIG-WORKS in the tank, battleship or airplane . . . in fact he's the BIG-WORKS in any Power-saving or Power-driving machinery. HE'S GOTTA BE GOOD. Our organization of many years of Gear Making Experience is going to keep him fighting and to help keep all of us on top.

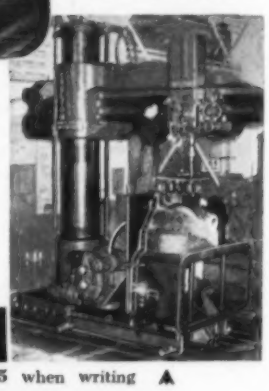
D. O. James MANUFACTURING COMPANY
1120 W. MONROE ST. (Established 1888) CHICAGO, ILL.

▲ Mention Item NED-6684 when writing ▲



DRILLS 4 SIDES WITH ONE SET-UP

By mounting these castings on a C-F Welding Positioner the operator can turn the work completely around and tilt it at any angle up to 135° off horizontal with a push button control—can drill all sides and the top with one set-up.



★ (Above) Drilling an angle hole. (Right) With work tilted at 90°, work is revolved to drill each side in turn.

CULLEN-FRIESTEDT CO., 1304 S. KILBOURN AVE. CHICAGO, ILLINOIS

▲ Mention Item NED-6685 when writing ▲

QUILL BEARINGS FOR POWER TRANSMISSIONS

This large 6-Ton "Mobilerane" built by the Osgood Company uses Bantam Quill Bearings in the rear wheel drive power transmission—an application where loads are extremely heavy and speeds range from 290 to 660 RPM.

High load capacity, rugged, compact design and long service life of Bantam's Quill Bearings are especially important advantages in the design of power transmissions, gear boxes and power take-off units. A wide range of types and sizes are available to meet your needs for wartime design. For full details on the Bantam Quill Bearing write for Bulletin Z-104.

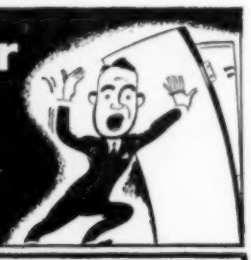
9 Features of Bantam's Quill Bearing

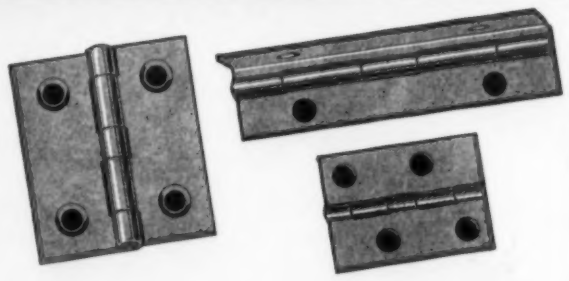
1. Design is simple—there are no fragile parts.
2. High radial load capacity in limited area.
3. Easy to lubricate.
4. Easy to install.
5. Rollers and races accurately ground and hardened.
6. One piece outer race—rollers are self-retained.
7. Flanges of outer race are ground on inside face.
8. Curvilinear trunnions for greater strength.
9. Roller length is correctly proportioned to roller diameter.

BANTAM BEARINGS
STRAIGHT ROLLER · TAPERED ROLLER · NEEDLE · BALL
BANTAM BEARINGS CORPORATION • SOUTH BEND, INDIANA

▲ Mention Item NED-6686 when writing ▲

Need Butts or HINGES FOR WAR WORK?





For hinges of any size . . . from small jeweler's models to the longest continuous types . . . you can get promptest service from Veeder-Root's modern hinge-manufacturing plant. That goes for stampings, too. Latest automatic machinery assures high-speed, volume production . . . and a complete plating department can give you practically any finish you desire. Send sketches and specifications, *together with your preference rating,* and you will get prices and dates by return mail.

HINGE DIVISION
VEEDER-ROOT INC.
HARTFORD, CONNECTICUT
Offices in Principal Cities Throughout the World

▲ Mention Item NED-6687 when writing ▲

New Literature—Continued

ABRASIVE CLOTH GADGETS—18 x 11 inch illustrated wall chart, "Metalite Cloth Gadgets Speed Sanding", describes use of abrasive cloth in numerous forms for metal finishing and polishing operations—these coated abrasive gadgets are useful in deburring holes, rounding out corners, beveling edges, cutting radii on edges of holes, polishing concave and internal surfaces, shaping and removing flash and scale—this abrasive cloth is available in form of spirabands, spirapoints, spiracords, slotted discs, mushroom pads and discs, pencils and mandrels—all types are illustrated—issued by Behr-Manning, Div. of Norton Co., Troy, N. Y.

▲ Mention Item NED-6688 when writing ▲

CHANGEOVER OF PRESS—4-page illustrated application sheet No. 83 discusses problem of changeover of press to welded design—includes eight concrete suggestions to facilitate changeover—diagrams of press of former design and of welded design are given—table shows weight and cost of various parts of both types of design—The Lincoln Electric Co., Dept. AP-574, 12818 Coit Rd., Cleveland, O.

▲ Mention Item NED-6689 when writing ▲

TOOL AND CUTTER GRINDER—4-page illustrated folder describes model "F" Universal tool and cutter grinder—machine has spindle speed of 3600 revolutions per minute—ball bearing motor is totally enclosed—illustrations and specifications are included for standard and optional equipment—issued by McDonough Mfg. Co., Eau Claire, Wis.

▲ Mention Item NED-6690 when writing ▲

PROTRACTOR—4-page illustrated folder, "The Improved Protractor", introduces Xactor, which is designed to measure directly any surface angle, such as are ground in tool bits, without the aid of any attachments—degree graduations are so arranged that component angle can be read directly, as well as required angle—sliding arm is graduated so that exact depth of holes is quickly measured—issued by Industrial Engineering Co., P. O. Box 433, 311 Sixth Ave. S., Minneapolis, Minn.

▲ Mention Item NED-6691 when writing ▲

AIRCRAFT TOOLS—42-page illustrated catalog lists and describes production tools for aircraft industry—tools are cup-forged, comparameter inspected and microglass polished—covers angle drills, bucking bars, bushings, countersink equipment, dimpling tools, drill adaptors, rivet equipment, hollow mills, plastic hammers, plumb bobs, rivet sets, sine bars, speedball tools, squeezer sets and squeezer yokes—bulletin contains detailed price list—issued by Aero Tool Co., 233 W. Olive St., Burbank, Calif.

▲ Mention Item NED-6692 when writing ▲

MARKING DEVICES—222-page illustrated seventieth anniversary catalog covers line of marking devices for every purpose—includes stamps, dies, stencils, brands, badges, signs, tags, name plates, checks, jig saw work, numbering machines, time stamps and self inking stamps—catalog contains complete index—issued by S. M. Spencer Mfg. Co., Boston, Mass.

▲ Mention Item NED-6693 when writing ▲

TURRET MILLING MACHINE—6-page illustrated folder No. 5MZ-942 describes Armor Universal turret milling machine—this machine combines horizontal and vertical spindles capable of any angle—separate motor on each spindle makes it possible to use them separately or together—hydraulic longitudinal feed provides power for fast production work—flexible hydraulic controls permit metered feed and rapid transverse in both directions—issued by Aircraft Machinery Corp., Burbank, Calif.

▲ Mention Item NED-6694 when writing ▲

CHIP BREAKERS—4-page illustrated bulletin No. 442 describes correct types of chip breakers and how to achieve them for various jobs—contains diagrams supplementary to descriptive material—issued by McKenna Metals Co., 171 Lloyd Ave., Latrobe, Pa.

▲ Mention Item NED-6695 when writing ▲

PUMP UNITS—4-page illustrated folder No. 31 describes complete line of small and medium size pump units—their principal applications are in coolant circulation, general circulation purposes, air-conditioning, transferring liquids, cellar draining, bilge emptying and fire protection—specifications and illustrations of various models are included—issued by G. B. Spiegel Corp., 3962 S. Calumet Ave., Chicago, Ill.

▲ Mention Item NED-6696 when writing ▲

INDUSTRIAL TRUCKS AND TRACTORS—illustrated catalog deals with industrial trucks, tractors and trailers approved under W.P.B. Limitation order L-112—includes explanation of procedure for ordering them under order L-112—contains detailed description and specifications on various models—issued by The Mercury Manufacturing Co., 4128 S. Halsted St., Chicago, Ill.

▲ Mention Item NED-6697 when writing ▲

LIGHTWEIGHT ROLLER CONVEYOR

"SPEEDWAYS" is the appropriate name of a new lightweight, ball-bearing equipped, multipurpose conveyor for loading, unloading, or conveying cases, boxes, cartons, crates, and odd containers.

This conveyor is not only unusually low in price but light enough to be quickly and simply moved to the work—one man easily carries a section. It is fully ball-bearing equipped and sturdily built to withstand heavy loads. Permanent as well as portable installations are available.

90° and 45° curves are standard "SPEEDWAYS" equipment and unlike most conveying systems are reversible for directional changes.

"SPEEDWAYS" operate by gravity, requiring but the slightest grade for perfect conveying . . . as little as 12 inches to 50 feet is sufficient. Adjustable stands make placement easy under all factory conditions.

"SPEEDWAYS" lends a new flexibility to any plant. It quickly becomes an indispensable asset eliminating heavy lifting and speeding up package handling wherever it is used. For truckers and shipping rooms it is an absolute necessity. Write for information to **Chas. S. Jacobowitz Corp.**, 1432 Niagara St., Buffalo, N. Y. —Advt.

▲ Mention Item NED-6698 when writing ▲

FOSTER ENGINEERING COMPANY · FOSTER AUTOMATIC VALVES · ESTABLISHED 1879

5 for Accurate REGULATION OR CONTROL

PRESSURE REDUCING REGULATORS

Type 39-Q1. Double seated
Type 39-Q2 also available

for STEAM, LIQUIDS, GASES

One of the latest developments in pressure reducing regulators — an air-loaded dome design for the accurate regulation of high and low pressure fluids.

Built for initial pressures up to 2500 lbs. per sq. in. and temperatures up to 1000° F., this valve will handle pressure reductions of a magnitude previously impractical in a single stage.

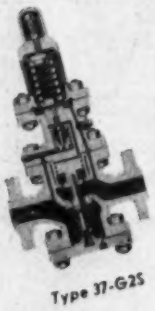
There are no operating springs in this simple, single-seated regulator. A constant loading is imposed by air, thereby insuring constant regulation. Accuracy is unaffected by spring deflection and hysteresis.

for STEAM

Built for pressures up to 1500 lbs. and 900° F. total temperature, the improved Foster Type 37-G2 Pressure Reducing Regulator assures accurate regulation despite widest variations of initial pressure.

Single-seated for dead-end service, both pilot and main valve are protected by internal strainers from pipe line sediment.

Streamlining of body distributes and assures free flow of steam, while construction of main valve provides maximum lift to minimize pulsating and wire drawing—affords graduated flow and modulating control. Can be fitted with locking cap or hand wheel.



Type 37-G25

TEMPERATURE REGULATORS

Type 38-T9

The Foster Type 38-T9 Temperature Regulator is an internally pilot-operated, piston-actuated valve for controlling temperatures within ± 1° F.

Single-seated for dead-end service, this regulator is built in sizes of 1/2 to 12 inches for pressures of 25 to 450 lbs., and for temperatures up to 300° F.

An essential feature of this design is that with relatively little temperature change (± 1° F.), the valve will travel from closed to fully opened position.

This regulator also is equipped with a temperature over-travel protective device.

The above shows but three of the scores of Foster Automatic Valves described in our new complete catalog. Write for your copy, on your company's letterhead, please.

FOSTER ENGINEERING Company
109 MONROE STREET, NEWARK, N. J.

▲ Mention Item NED-6699 when writing ▲

SECTIONAL GUARD HOUSE

This 8 x 8 x 8 foot sectional, portable guard house, constructed almost entirely of wood, with glass on all sides, asphalt roofing on heavy plywood base, and with flooring of rift hard pine, is easily set up or knocked down. It is designed for housing plant guards, as a temporary office or emergency station, or for an observation shelter or ticket booth.

Two sashes open outward for ventilation. Door is furnished complete with hardware. Wall sections are 1¾ inches thick with glass upper panels on all sides. Unit is supplied with stack for use with a stove for heating purposes. Exterior is prime finished. List price is $258. Detailed information on request from C. H. Dresser & Son, Inc., 301 Sheldon St., Hartford, Conn.

▲ Mention Item NED-6700 when writing ▲

WOODEN TRAYS

Wooden trays built to your specifications for metal parts to prevent damage or loss. Trays of this type are used by the thousands in defense industries. Tell us your requirements and let us suggest designs. C. H. Dresser & Son, Inc., 301 Sheldon St., Hartford, Conn.

▲ Mention Item NED-6700-A when writing ▲

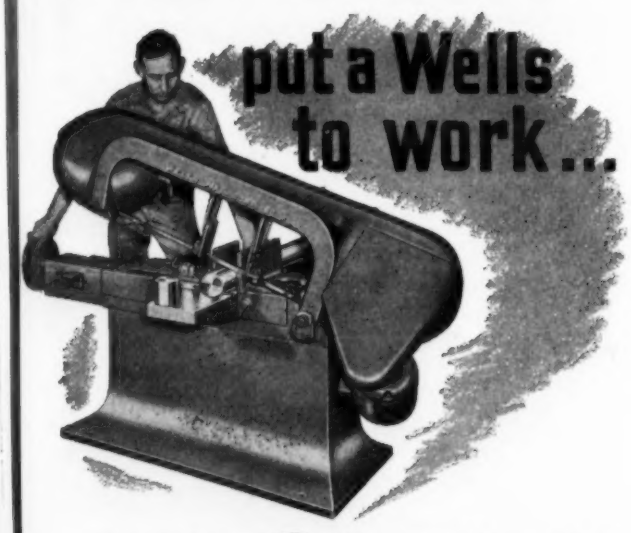
CALL A "PLASTICS WARDEN!"

Virtually all of the many kinds of plastics, including Synthane, are under allocation. If you are not sure of the classification of your product use with regard to plastics, or would like to have help in conserving the quantity of plastics you use, call upon our representatives or the representatives of any plastics manufacturer. They'll be glad to serve as your "plastics wardens."

SYNTHANE CORPORATION N. E. RIVER ROAD • OAKS, PA.

SHEETS RODS · TUBES FABRICATED PARTS — SYNTHANE — Bakelite — laminated — TECHNICAL PLASTICS — SILENT STABILIZED GEAR MATERIAL

▲ Mention Item NED-6701 when writing ▲



...and you'll see *Real* metal cutting action!

When you want fast precision metal cutting — put a Wells on the job. You'll have a saw that handles many shapes and types of metal.

The Wells Series 80, above, is the latest model of the popular Wells No. 8. It has all the advantages that Wells have built into their products through years of leadership in band saw manufacture. It is a rugged, versatile unit, capable of cutting up to 8" rounds or 8" x 16" rectangles. You will find it one of the handiest tools in a plant. You can get one quickly too! Phone your distributor or write us.

Wells Has Established Leadership

WELLS MANUFACTURING CORPORATION
Wells METAL CUTTING BAND SAWS
1313 HARDING ST. • THREE RIVERS, MICHIGAN

▲ Mention Item NED-6702 when writing ▲

New Literature—Continued

SLOTTING MACHINE—4-page illustrated folder, "The Universal Slotmaster", describes slotting machine which can be used as vertical slotter and shaper for cutting keyways, templates, splines, internal gears, precision blanking dies, molds or wherever sharp corners and special shapes are machined—unit measures 18 inches in length, 8 inches in width and 12 inches in depth—machine comes complete with pulleys, motor, belt and with mounting adaptable to round or flat-on-round milling machines—issued by Experimental Tool & Die Co., 12605 Greiner Ave., Detroit, Mich.

▲ Mention Item NED-6703 when writing ▲

FIBER WALL PANELS—24-page illustrated bulletin tells advantages of Strong-Bilt panels for wall and ceiling lining—they have six times impact resistance of ⅜-inch plaster board—can be applied any time regardless of climatic conditions—panels are particularly ideal for demountable and prefabricated construction—surface can be covered with single coat of paint—bulletin contains list of specifications—issued by The Upson Co., 29 Upson Point, Lockport, N. Y.

▲ Mention Item NED-6704 when writing ▲

ABRASIVE CUTTING—32-page illustrated book, "Abrasive Cutting", discusses operation of abrasive cutting machines—traces development of machines from dry abrasive cutting method up to modern wet abrasive cutting machine—contains chapters on advantages of abrasive cutting, principles governing abrasive wheel efficiency, effect of wheel speed on wheel efficiency and important abrasive cutting tables—issued by Andrew C. Campbell Div., American Chain & Cable Co., Inc., Bridgeport, Conn.

▲ Mention Item NED-6705 when writing ▲

WATER ANALYSIS—4-page technical paper No. 81 describes accurate method of calcium determination for routine plant control—new method is simpler and quicker than conventional gravimetric calcium analysis—is not affected by normal concentrataions of ions found in industrial waters—paper contains complete details of procedure and results of this method—issued by W. H. and L. D. Betz, Gillingham and Worth Sts., Frankford, Philadelphia, Pa.

▲ Mention Item NED-6706 when writing ▲

SANITARY PUMPS—4-page illustrated folder No. 115 covers line of sanitary pumps used in food and beverage processing plants—pumps have relatively constant capacity over wide variation in discharge heads—units are self-priming and capable of handling high suction lifts—various models are shown and specifications are listed—issued by Blackmer Pump Co., 1976 Century Ave., Grand Rapids, Mich.

▲ Mention Item NED-6707 when writing ▲

SPRAY DRYING PLANT—11-page illustrated bulletin describes spray drying plant for producing food and other products in powder form—plant employs centrifugal type spray head—it is composed of drying chamber, concentrator, air heating unit, air filter, air supply fan, powder cooling fan and sanitary pumps with variable speed drives for handling liquid material to be dehydrated—detailed diagrams show operation of equipment—issued by Drying & Concentrating Co., 332 S. Michigan Blvd., Chicago, Ill.

▲ Mention Item NED-6708 when writing ▲

PLANERS—12-page illustrated bulletin No. 500 describes heavy housing planers—types of drives available to suit individual installation are; belt drive with countershaft, plain motor drive on housings, two speed motor drive on housings, ordinary reversing motor drive and variable voltage reversing motor drive—various models and accessories are illustrated and specifications are listed—issued by The Ohio Machine Tool Co., Kenton, O.

▲ Mention Item NED-6709 when writing ▲

FLEXIBLE SHAFT MACHINES—8-page illustrated catalog No. 30 lists and describes Foredom flexible shaft machines—these machines are used for grinding, milling, drilling, deburring, engraving, sanding, slotting and many other operations—they may be employed on all metals as well as on glass, plastics and wood—specifications and illustrations are shown for various models and accessories—issued by Foredom Electric Co., 27 Park Place, New York City.

▲ Mention Item NED-6710 when writing ▲

ROLLING WOOD DOORS—4-page illustrated folder, "Save Steel", advocates using Wilson rolling wood doors in place of steel doors to aid war program—rolling wood door requires 600 pounds of steel in contrast to rolling steel type which requires 2700 pounds—doors are made up of spruce, cypress, fir, redwood, cedar, Arkansas pine and long leaf yellow pine—all wood parts are immersed in wood preservative before assembly, insuring protection against ravages of weather, rot, termites, boring larvae, insects and marine organisms—issued by The J. G. Wilson Corp., 370 Lexington Ave., New York City.

▲ Mention Item NED-6711 when writing ▲

SIGNODE SYSTEM OF STEEL STRAPPING

Stopping Wartime Waste

BY PREVENTING TRANSIT DAMAGE

REINFORCES Cartons, Boxes, etc. To allow lighter-weight, safe containers. To reduce bulk for overseas and carload shipments.

PREVENTS PILFERAGE by the Signode Seal which cannot be resealed without showing evidence of tampering.

BRACING Carload Shipments.
1. Faster loading and unloading.
2. Saves weight and critical materials (lumber and nails).
3. Assures safe delivery of cars loaded to maximum capacity.

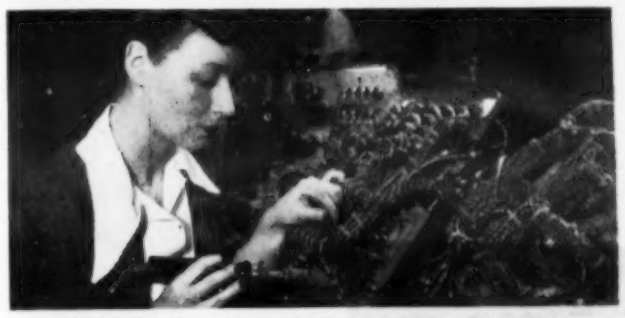
These are a few of Signode's many advantages which result in its choice for a great volume of war shipments. Signode representatives daily add to a shipping experience which is yours to draw on. Contact our nearby representative or write us.

SIGNODE STEEL STRAPPING CO.
2632 N. Western Ave., Chicago, Ill.
Brooklyn, N. Y.: 378 Furman St.
San Francisco, Calif.: 487 Bryant St.
Representatives in Principal Cities throughout the United States and Canada

SIGNODE — 25 Years of Packing Improvement

▲ Mention Item NED-6712 when writing ▲

In Hundreds of VITAL NERVE CENTERS . . .



KESTER CORED SOLDERS Won't Let Go!

● In the electrical equipment of a fighting machine—built to "take it and dish it out"—Kester Rosin Core Solder is worth its weight in gold! Especially designed for electrical use, it contains a patented, plastic rosin flux that does not cause corrosion or injure insulating material.

● Kester Acid-Core Solder, for general applications, makes a tight, clean permanent union.

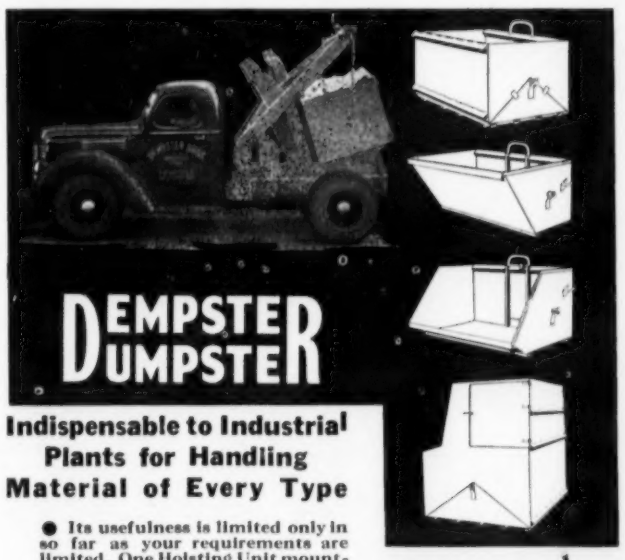
● Kester Cored Solders all are superior in quality—they resist bending, vibration, shock, contraction and expansion.

● Kester engineers will gladly assist you with any production problem solder may help to solve. No obligation!

KESTER SOLDER COMPANY
4249 Wrightwood Avenue, Chicago, Illinois
Eastern Plant: Newark, N.J. Canadian Plant: Brantford, Ont.

KESTER Cored Solders — STANDARD FOR INDUSTRY

▲ Mention Item NED-6713 when writing ▲



Indispensable to Industrial Plants for Handling Material of Every Type

● Its usefulness is limited only in so far as your requirements are limited. One Hoisting Unit mounted on your truck serves any number or types of Dumpster bodies for hauling all classes of material from light weight, such as waste or rubbish, to extremely heavy material. Body capacities 1½ to 10 cu. yds. With Dumpster crane and winch accessories the Dempster-Dumpster becomes an even greater plant necessity for hauling, loading and unloading, stacking steel sheets, moving heavy castings or what have you, in general plant service. Never an idle moment for the Dempster-Dumpster and all the time effecting great savings in men, time, trucks, tires and fuel. Write for FREE catalog describing many of the jobs this valuable equipment is doing now.

DEMPSTER BROTHERS, INC.
5122 SPRINGDALE AVE.
KNOXVILLE TENNESSEE

▲ Mention Item NED-6714 when writing ▲

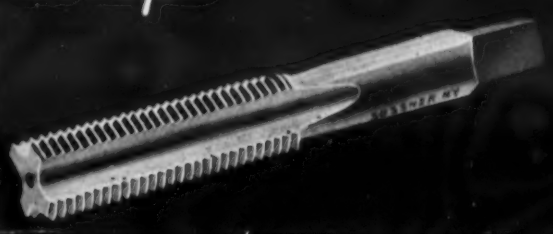
EX-CELL-O BUSHINGS assure uniformity, easy replacement, long life.

XLO EX-CELL-O PRECISION

For complete data on all standard sizes, refer to Ex-Cell-O Bulletin No. 11882

▲ Mention Item NED-6715 when writing ▲

there IS a difference in taps



4 good reasons why

SOSSNER taps last longer and cut more perfect threads

CUTTING . . . Sossner taps are carefully fluted and mirror polished to precise depth and width for maximum strength, minimum friction, and best cutting angle.

STRUCTURE . . . All Sossner taps are heat-treated in time-temperature-atmosphere controlled furnaces!

PRECISION GROUND FROM THE SOLID STOCK . . . All Sossner taps are ground to micro-finish from the hardened solid blank using the very latest equipment and our own newly developed methods.

ACCURACY . . . EVERY tap is measured with precision wires on master measuring instruments calibrated to .0001 in. Only the most modern and accurate equipment is used to check the form and lead.

TAPS AND GAGES OF AMERICAN NATIONAL AND BRITISH THREAD FORMS IN SPECIAL AND STANDARD SIZES

Write to Sossner, 213 Centre St., N. Y. or 31 B'way, Lynbrook, N. Y.

TAPS GAGES STEEL STAMPS CUTTING TOOLS

SOSSNER

"32 year reputation for precision workmanship."

▲ Mention Item NED-6716 when writing ▲

New Literature—Continued

MIXERS FOR FLOCCULATION TANKS—4-page illustrated folder No. 2042 covers Straightline mixers used in modern sewage and water treatment plants to accelerate coagulation of finely divided solids—with shaft parallel to flow, and paddle rotation across flow, these slow mixers produce spiral mixing action that builds up swirling motion in liquid—use of pivoted paddle gives installation added flexibility—issued by Link-Belt Co., Dept. NED, 307 N. Michigan Ave., Chicago, Ill.

▲ Mention Item NED-6717 when writing ▲

REFINERY MANUAL—illustrated bulletin V-139 is refinery manual detailing selection of specific valves for given applications—manual lists many processes of refining and includes glossary of approximately two hundred refining terms—photographs of typical refinery valve installations show general hook-up of lubricated plug valves—drawings reveal cross sections of numerous types of valves—issued by Merco Nordstrom Valve Co., 422 Lexington Ave., Pittsburgh, Pa.

▲ Mention Item NED-6718 when writing ▲

PULL SHOVEL—12-page illustrated catalog No. 1942 describes Link-Belt LS-120 crawler shovel, crane, dragline—among features of this machine are all welded unit construction, self-aligning center pin bearing, self-aligning rotating rollers and fully independent rapid boom-hoist—catalog shows construction details, installation views and specifications—issued by Link-Belt Speeder Corp., Dept. NED, 307 N. Michigan Ave., Chicago, Ill.

▲ Mention Item NED-6719 when writing ▲

TUBING AND PIPE PROTECTION—10-page illustrated bulletin, "Tubing and Pipe Protection Methods", describes Seal-Plugs, Seal-Caps, Flex-Caps and Boss-Plugs—advises shipping hydraulic units with fittings installed—typical installations of Tubing Seal fittings in aircraft plant are shown—issued by Tubing Seal-Cap, Inc., 215 W. Seventh St., Los Angeles, Calif.

▲ Mention Item NED-6720 when writing ▲

GUARD'S MANUAL—5 x 8-inch book, "The Industrial Guard's Manual", by Harry Desmond Farren covers procedure for plant guards—contains the "cardinal" rules and subjects with which all guards should be acquainted—stresses that safety of millions of war workers depends on constant vigilance of plant guards—positions should be filled by robust, mentally alert men—$1.25 per copy—issued by National Foremen's Institute, Inc., Deep River, Conn.

▲ Mention Item NED-6721 when writing ▲

WARTIME EPIDEMICS—4-page illustrated folder, "Guard Against Wartime Epidemic" urges use of sanitary utensils to maintain public health, particularly in wartime—folder warns that, during World War I, disease took more lives than enemy did—shows that use of paper cups at fountain, in factory and in office can prevent spread of communicable diseases—paper cups and containers are also ideal for packing lunches for home-front workers—issued by The Public Health Committee, The Cup and Container Institute, 1790 Broadway, New York City.

▲ Mention Item NED-6722 when writing ▲

PREVENTION OF CARBURIZATION OR DECARBURIZATION—4-page illustrated folder, "Park No-Carb", describes a liquid paint for prevention of carburization or decarburization—paint is ready-to-use, premixed product requiring no further additions or dilutions for application to clean surface of low-carbon steel, for use on finished molybdenum high-speed tools, or alloy steels before and after fabrication—issued by Park Chemical Co., 8074 Military Ave., Detroit, Mich.

▲ Mention Item NED-6723 when writing ▲

CUTTER-GRINDER—4-page illustrated folder introduces Hilco Universal cutter-grinder with index dividing head—will grind to sharpness and cutting uniformity any concave, convex, helical, straight or tapered angle cutter—dividing head has seven index circles consisting of 12, 13, 14, 15, 16, 18 and 20 micrometer spaced holes or stops, multiples of which assure uniformity of grinding on cutters with any number of teeth or cutting surfaces—issued by Berco Mfg. Co., 429 W. Superior St., Chicago, Ill.

▲ Mention Item NED-6724 when writing ▲

PRECISION GRINDERS—36-page illustrated catalog No. 42 is designed to aid in efficient purchase of portable precision grinders—more than fifteen tools and their accessories are listed—each grinder is illustrated and principal dimensions are given in outline drawings—grinding quills for each model are shown and range of work that can be handled is specified—catalog contains both product and alphabetical index—issued by The Dumore Co., Fourteenth & Racine Sts., Racine, Wis.

▲ Mention Item NED-6725 when writing ▲

DRAFTED

TO SPEED THE FLOW OF WAR MATERIALS

. . . The BUDA "Chore Boy"

—One-half Ton Industrial Shop Truck

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December, 1942

What Have You?

NED's editors cordially invite you to send in announcements of your company's new developments. We are interested in publishing descriptions of all new equipment, new materials and allied products of use in manufacturing and process industries. Please address your communications to the Editor, New Equipment Digest, Penton Bldg., Cleveland.

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SUNNEN

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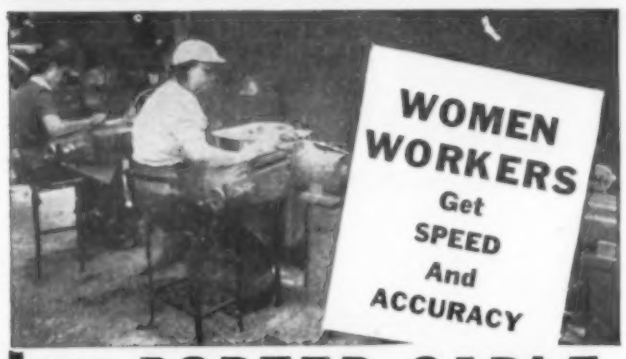

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★ *LIGHT-WEIGHT*
★ *EASILY AND QUICKLY SERVICED*

143 T

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SERVICE

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NORTON COMPANY
Worcester, Mass.

T-485

NORTON ABRASIVES

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Cesco 'Comfort Bridge" Goggles

Provides SAFETY for the eyes and COMFORT for the worker. Broad bearing Jumbo pads float the spectacle frames across the nose. One of many items in the new CESCO CATALOG!

Just off the Press!

A NEW CATALOG
EVERY INDUSTRIAL EXECUTIVE SHOULD HAVE

★ A veritable encyclopedia of Industrial Head and Eye protection equipment needed in every plant to increase safety, speed up production, reduce fatigue and injuries. Page after page of goggles for every purpose, spectacles, respirators, welders' shields, helmets, masks, hoods, grinder guards, etc. A book you ought to keep on your desk, not only when purchasing, but for daily reference and specific information.

Write For Your Copy Today!

CHICAGO EYE SHIELD CO. 2335 WARREN BLVD. CHICAGO, ILLINOIS

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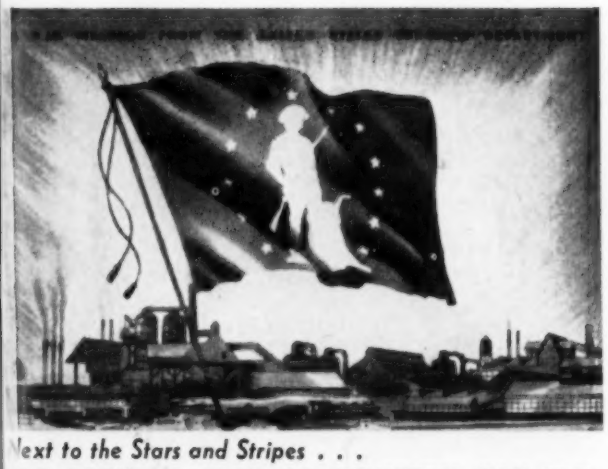

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AS PROUD A FLAG AS INDUSTRY CAN FLY

Signifying 90 percent or More Employee Participation in the Pay-Roll Savings Plan

IT doesn't go into the smoke of battle, but wherever you see this flag you know that it spells Victory for our boys on the fighting fronts. To everyone, it means that the firm which flies it has attained 90 percent or more employee participation in the Pay-Roll Savings Plan . . that their employees are turning a part of their earnings into U. S. Savings Bonds *regularly*, every pay day, with the goal being 10 percent of the gross pay roll allotted to Bonds. You don't need to be engaged in war production activity to fly this flag. Any patriotic firm can qualify. For facts about the Pay-Roll Savings Plan, write Treasury Department, Section D, 709 12th Street, NW., Washington, D. C.

MAKE EVERY PAY DAY "BOND DAY"

U. S. WAR Bonds ★ Stamps

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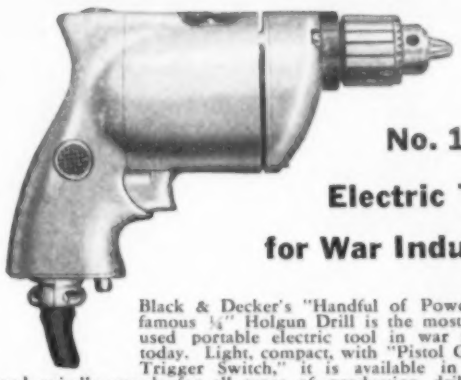
BLACK & DECKER'S
HOLGUN



No. 1
Electric Tool
for War Industry

Black & Decker's "Handful of Power," the famous ¼" Holgun Drill is the most widely used portable electric tool in war industry today. Light, compact, with "Pistol Grip and Trigger Switch," it is available in models and spindle speeds for all types of production drilling—in sheets, castings and forgings, in wood, plastics and other materials—from high torque at 500 R.P.M. to high speed at 5000 R.P.M. Designed for work in close quarters, won't heat up under extreme service.

Ask your nearby Black & Decker Distributor for complete information on the Holgun or any other tool in the complete Black & Decker line. Or write: The Black & Decker Mfg. Co., 762 Penna. Ave., Towson, Md.

LEADING DISTRIBUTORS EVERYWHERE SELL
Black & Decker
PORTABLE ELECTRIC TOOLS

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FOR THE BUSY MAN THE BUSY SHOP

Heller slanting stationary top desks aid materially in the increased efficiency of your shop foremen, time keepers, stock room employees, clerks, etc.

This type of desk has proven to be most popular. It is rigidly constructed of wood, handsomely finished in olive drab, and fitted with three sorting bins and a large drawer. Available is desk height, standing height and top without legs to set on counter or bench. Desk top measures 34½ x 30 inches. Place these Heller shop desks throughout your plant for increased production. All orders filled promptly. Ask for complete details and prices.

W. C. HELLER & CO.
DEPT. NED PENTON ST. MONTPELIER, O.

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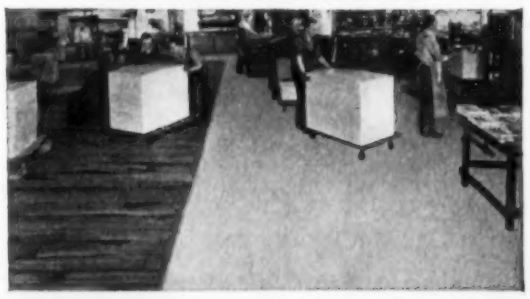
LOOK!



STONHARD RESURFACER produced this NEW heavy-duty floor in only 36 hours!

It was installed over the week-end, thus preventing loss of time.

We can give YOU a similar floor . . . one that is dampproof, fire-resisting, non-skid, sound absorbing, non-chipping and easy to keep clean.

Sounds like a lot to expect from one product? It's NOT too much for STONHARD RESURFACER. Just fill in your name and address and we'll prove it!!!

STONHARD COMPANY
808 TERMINAL COMMERCE BLDG., PHILA., PA.

Send information to
Company
Address
City State
Mr.

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For MAGNETIC EQUIPMENT to SPEED PRODUCTION see

Stearns MAGNETIC

Stearns Drill Stand Magnet

The STEARNS Drill Stand Magnet, a profitable investment for steel and iron fabricators. Provides greater accuracy in drilling, saw hole cutting, etc. . . . increases operator output with less fatigue. Fits any standard old man stand, easily attached, holds with tenacious grip in any position. Will cut your fabricating costs.

Stearns Holding Magnet

STEARNS Holding Magnet or Magnetic Clamp holds plates in alignment for welding quickly, safely, economically, a difficult job made easy. Feel free to consult us on fabricating problems. We may be able to help you get smoother, faster production.

Rectangular Lifting Magnets in various sizes for moving sheets, rails, billets, etc.—fast, efficient and low cost. The link shown is extra, for spreader bar.

Lifting Magnets

STEARNS MAGNETIC MFG. CO.

653 S. 28th Street Milwaukee, Wis.

SEPARATORS — CLUTCHES — PULLEYS — DRUMS — MAGNETS

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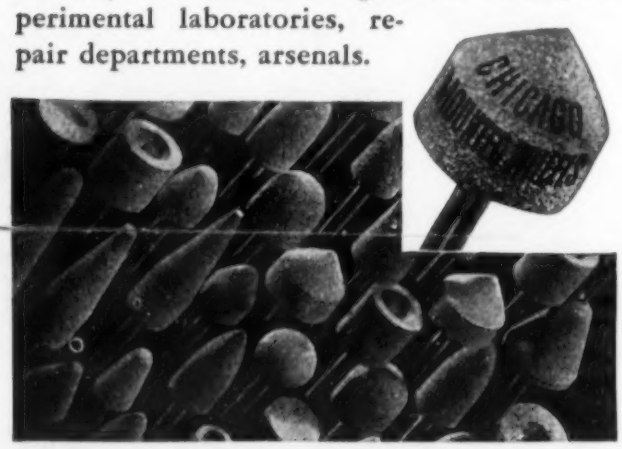
ATTENTION

We have a new job—to keep grinders going full blast all over the country in every war industry—in machine shops, tool rooms, experimental laboratories, repair departments, arsenals.



CALLED FOR ACTIVE DUTY ON THE PRODUCTION FRONT

Our complete facilities are now devoted to making CHICAGO Mounted Wheels and Vitrified Grinding Wheels 3″ and under in diameter. We're proud and happy to be given this definite and important part in the War Program. Our work goes on night and day supplying these vital aids for Victory.

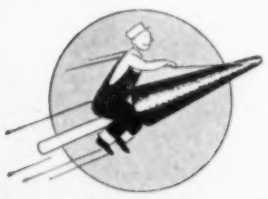
Send us your priority orders for mounted and unmounted grinding wheels up to and including 3″ in diameter. You will get the right wheel for the job—when you want it.

We no longer manufacture the larger grinding wheels. We're sorry to have to disappoint our good customers (many of whom have been with us for half a century) on their orders for Vitrified Wheels over 3″ in diameter.

Specializing on high production of Mounted Wheels, Cut-off Wheels and small Vitrified Grinding Wheels will be our job until the war is won. We know you will understand.

YOU SHOULD HAVE OUR NEW CATALOG

It shows in actual colors and exact sizes the most complete line of Mounted Wheels made. Send for copy today.



CHICAGO WHEEL & MFG. CO.

America's headquarters for Mounted Wheels.

Established 1896

1101 W. Monroe St., Dept. NE

CHICAGO, ILL.

NE-12

Please send new Chicago Mounted Wheel catalog

Name _____

Address _____

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New Literature—Continued

EXHAUSTER-VENTILATOR—4-page illustrated bulletin No. 726 describes Octopus combination exhauster and ventilator which is designed for use in ship holds, mines, sewers, tunnels, welding departments and similar locations—any number, up to six lines may be used, permitting application for exhausting purposes to several machines—unit may be converted from exhauster to ventilator by changing position of the tube adapter which is part of equipment—issued by Chelsea Fan & Blower Co., 1206 Grove St., Irvington, N. J.

▲ Mention Item NED-6748 when writing ▲

FLUORESCENT FIXTURES—12-page illustrated bulletin describes line of fluorescent fixtures for office, store or industrial lighting—bulletin contains diagrams and specifications of various models—also shown is new type of ballast which eliminates need for starting switches—supplementary price list is included—issued by R. & W. Wiley, Inc., 777 Hertel Ave., Buffalo, N. Y.

▲ Mention Item NED-6749 when writing ▲

BATTERY MAINTENANCE MANUAL—14-page brochure is maintenance manual for Philco motive power and rubber jar batteries—it discusses subjects of theory, installation, operation, charging and maintenance—forty-three practical suggestions for care of batteries are offered—issued by Storage Battery Div., Philco Corp., 467 Calhoun St., Trenton, N. J.

▲ Mention Item NED-6750 when writing ▲

HYDRAULIC VANE PUMPS—2-page illustrated bulletin No. Hy-2 describes line of infinitely variable delivery hydraulic vane pumps—standard mounting permits them to be used as replacements for other pumps on existing equipment—use of dual instead of single vanes and beveling of adjacent edges of each pair of vanes allows oil, under operating pressures of pump, to flow around all edges of vanes—issued by Hydra-Motive Inc., 221 St. Aubin St., Detroit, Mich.

▲ Mention Item NED-6751 when writing ▲

ANNOUNCING

REVISTA INDUSTRIAL

Latin American Editions of NEW EQUIPMENT DIGEST

• REVISTA INDUSTRIAL, a new monthly publication for Latin American industry, with its first issue being published in April, 1943, will be published by Equipment Digest Publishing Co., Cleveland, a subsidiary of The Penton Publishing Co.

CONDENSED DATA SHEET

PURPOSE AND SCOPE—To furnish industry in the Latin Americas with information on equipment, processes, materials, methods and applications.

MARKET COVERED—The market covered is the industries in all the Latin Americas. There are two editions—one printed in Portuguese for Brazil, and the other in Spanish for the balance of the Latin Americas.

The industries covered include the following groups:

MINING AND PETROLEUM; CONSTRUCTION: Highways and Waterworks, Building Contractors; PUBLIC UTILITIES AND TRANSPORTATION: Light and Power, Telephone and Telegraph Companies, Steam and Electric Railways, Automotive, Aviation, Marine Repair Shops; FOOD PROCESSING INDUSTRIES: Sugar Mills, Beverages, Breweries, Canning and Dairy; OTHER PROCESS INDUSTRIES: Drugs and Chemicals, Soap, Paints and Varnishes, Glass, Cement, Tanneries, Paper and Pulp, Miscellaneous Process Industries; TEXTILE MILLS: Wool, Silk, Cotton, Rayon; METALWORKING INDUSTRIES: Iron and Steel Industries, Machinery and Electrical Equipment, Repair Shops, Other Metal Industries; MISCELLANEOUS INDUSTRIES: Clothing Manufacturers, Furniture, Leather Products, Tobacco, etc.; CONSULTING ENGINEERS; GOVERNMENT AGENCIES; IMPORTERS OF MACHINERY AND ELECTRICAL EQUIPMENT.

DISTRIBUTION—The initial distribution and guarantee is 20,000 copies. Names of Latin American clients or prospects will be accepted from manufacturers' lists for possible addition after consideration. The distribution will be checked periodically in the field by men thoroughly familiar with the Latin American countries.

ADVERTISING DATA—

Insertions	1/9 Page 3¼″ x 4¾″	2/9 Page 3¼″ x 9½″
Six	$95.00	$180.00
Nine	92.50	178.00
Twelve	90.00	176.00
Twenty-four	88.00	172.00
Forty-eight	86.00	168.00

A unit space is 1/9 page. Rates are based on total number of unit spaces used within a period of one year.

Maximum size advertisement accepted—3¼″ x 9½″.

Minimum contract six insertions.

Rates include both editions. Not sold separately.

Rates include translation into Spanish and Portuguese when English copy is furnished.

Page is 3 columns, each column 3¼ inches wide. Halftones 100 line screen. Copy can be furnished not later than 60 days ahead of issue date. Complete plates not later than 40 days ahead of issue date. Two sets of all cuts to be furnished as publication is printed in both Spanish and Portuguese. Plates must not contain wording in English except trade mark or name if desired and/or name and address of company.

For further information and data write, wire or phone the nearest representative, or . . .

REVISTA INDUSTRIAL

(Published by Equipment Digest Publishing Co.)

PENTON BUILDING • CLEVELAND, OHIO

CLEVELAND—F. O. Rice, 1213 W. Third St., Tel. MAin 8260

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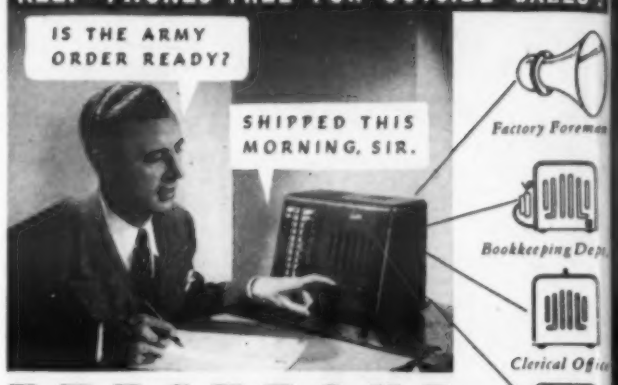
CHICAGO—J. H. Robison, 520 N. Michigan Ave., Tel. WHitehall 8080

NEW YORK—B. R. Baker, 110 E. 42nd St., Tel. MUrray Hill 3-3892

LOS ANGELES—F. J. Fuller, 130 N. New Hampshire Ave., Tel. Fairfax 1758

KEEP 'PHONES FREE FOR OUTSIDE CALLS!



EXECUTONE

Communication Systems

for amplified paging and private 2-way conversations

Switchboard bottle-necks slow up your entire organization; interior calls cause congestion; waiting for connections wastes valuable time. With EXECUTONE, you can talk directly to, and receive information from, anyone in any part of your plant, instantly, without taking him from his work. This saves your time and the time of your employees — steps up efficiency — keeps production at full speed 60 seconds every minute.

EXECUTONE quickly pays for itself in man-hours saved.

Write for descriptive folder: F5

EXECUTONE, Inc.

415 Lexington Avenue, New York, N. Y.

SERVICE FACILITIES IN PRINCIPAL CITIES

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"Man" Your Elwell-Parkers—the New Way!

Your *men* are being siphoned off—into other Plant jobs, into the Armed Services. But your *loads* must keep zipping—they *will*, because we're helping you to train women to operate your Elwell-Parker Trucks in the Emergency!

An Elwell-Parker Representative will give preliminary instructions. Bulletin "Lady—will you Give a Lift?" contains full particulars. A Service Man will inspect your Elwell-Parkers and recommend interchangeable replacement parts. Write today.

The Elwell-Parker Electric Company, 4502 St. Clair Avenue, Cleveland, Ohio

ELWELL-PARKER *Power Industrial* TRUCKS

ESTABLISHED 1893 • BUILDING POWER INDUSTRIAL TRUCKS SINCE 1906

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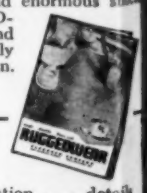
. . . TOUGH OVERLAY for WOOD or CONCRETE FLOORS

Add years of useful service and improve the efficiency of rough, splintered wood floors or rutted concrete floors with an overlay of durable RUGGEDWEAR RESURFACER. Your new heavy-duty floor will have a smooth, tough, fire-resistant surface. Its resilience will withstand enormous shock . . . the stress and strain of any vibration. RUGGEDWEAR may also be used for patching holes, cracks and ruts in concrete floors to a solid feather edge. Easily applied . . . you mix the material and trowel it on. Dries fast.



Request Valuable Descriptive Folder on Tough Floors

MAKE THIS TEST

FLEXROCK COMPANY

2303 Manning St., Philadelphia, Pa.

Please send me complete RUGGEDWEAR information . . . details of FREE TRIAL OFFER—no obligation.

Name .....

Company .....

Address .....

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